FINAL ENVIRONMENTAL ASSESSMENT of the BASE REALIGNMENT ACTIVITIES at BERGSTROM AIR FORCE BASE, TEXAS

Prepared For:

TACTICAL AIR COMMAND

Bergstrom Air Force Base, Texas

8 NOVEMBER 1989

FINDING OF NO SIGNIFICANT IMPACT

BASE REALIGNMENT ACTIVITIES AT BERGSTROM AFB TX

NAME OF ACTIONS

Base realignment, deactivation and conversion of aircraft at Bergstrom AFB, TX.

DESCRIPTION OF THE PROPOSED ACTIONS AND ALTERNATIVES

The USAF will relocate nine EC-130H aircraft and associated personnel and equipment of the 41st ECS from Davis-Monthan AFB to Bergstrom AFB, TX beginning in January 1990. This action is a result of the Base Realignment and Closure Commission Report. Two other actions, deactivation of two RF-4C squadrons and conversion of 21 F-4s for 18 F-16s for the Air Force Reserve unit, are proposed to occur within the save time frame of the EC-130 beddown and therefore are included in the analysis to evaluate the cumulative effects. If all actions are completed as proposed, there will be a reduction of 26 aircraft for a new total of 82 aircraft assigned to the base.

The realignment of EC-130 aircraft to Bergstrom is being carried out in compliance with the Base Realignment and Closure Act, Public Law 100-526. Provisions of this act exempt the Air Force from considering alternatives

The purpose of the deactivation is to retire the aging RF-4C aircraft from the Air Force inventory, and reduce operating costs for the Tactical Air Command (TAC). These F-4 aircraft are some of the oldest F-4s in TAC. Their high operating costs make it no longer cost effective to retain these aircraft. TAC operating costs must be reduced to help meet Congressionally mandated cuts in the Department of Defense (DOD) budget. The proposed action would enable the USAF to implement its portion of these budget cuts in a couple of ways: 1) overall force structure reduction, and 2) elimination of especially costly-to-operate aircraft.

Alternatives considered for the deactivation include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because it does not satisfy Congressionally mandated DOD budget cuts. Delaying the action is also not viable because congressionally mandated budget cuts must be met for the current FY. Delaying this action would further complicate the reduction schedule at a later date. While other means of reducing USAF operating costs exist, none are as feasible as replacements for the proposed action. A force structure reduction is the best way to make cuts of the required magnitude and timing. The best place to make such a reduction is with the RF-4C at Bergstrom AFB, due to aircraft age and operating costs. Considering another unit would just shift the proposal to another location and the proposed actions would be scheduled for a later date for Bergstrom AFB.

The purpose of the aircraft conversion is twofold: first to retire the aging F-4E aircraft from the Air Force Reserve inventory, and second to upgrade the aircraft being used by the Air Force Reserves. These F-4 aircraft are among the oldest fighters in the Air Force Reserves. With operating costs double

those of modern fighters, it is more cost effective to replace these aircraft. The proposed action would enable the USAF Reserves to eliminate these especially costly-to-operate aircraft.

Alternatives considered for the conversion include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because the current F-4 aircraft are old and need to be replaced. Delaying the action is also not viable because of the same reason. The best place to convert from the F-4 to the F-16 at this time is Bergstrom AFB. Considering another unit would just shift the proposal to another location and the proposed action would be reprogrammed for a later date at Bergstrom AFB.

SUMMARY OF ENVIRONMENTAL IMPACTS

All environmental impacts of the three actions would be negligible or slightly beneficial. Positive impacts resulting from a combination of all the actions would include decreased noise and air emissions. These impacts represent a negligible change and are considered insignificant.

The actions would have a negligible cumulative effect on most of the socioeconomic resources within the surrounding communities. Reductions in employment, income, and housing demand may create short-term impacts in the local area. However, socioeconomic impacts of the actions are insignificant and would be offset by the continuing growth in jobs and influx of new residents to the area.

CONCLUSION

Moving the EC-130 aircraft into Bergstrom AFB will carry out the directives of the Base Realignment and Closure Commission. The other proposed actions will facilitate the ability of the United States Air Force (USAF) to retire the aging F-4 aircraft, and aid in reducing operating costs for Tactical Air Command (TAC). The cost saving benefit to TAC could lead to costs incurred by the local communities due to out-migration of personnel; however, the socioeconomic impacts of the drawdown were assessed as not significant since they are short-term in view of the rate of community growth. The actions, either individually or cumulatively, would have no significant impact on the biophysical environment. The general result of this EA supports a finding of no significant impact.

_____ Date_____

Thomas L. Lord
Chairman, Tactical Air Command
Environmental Protection Committee

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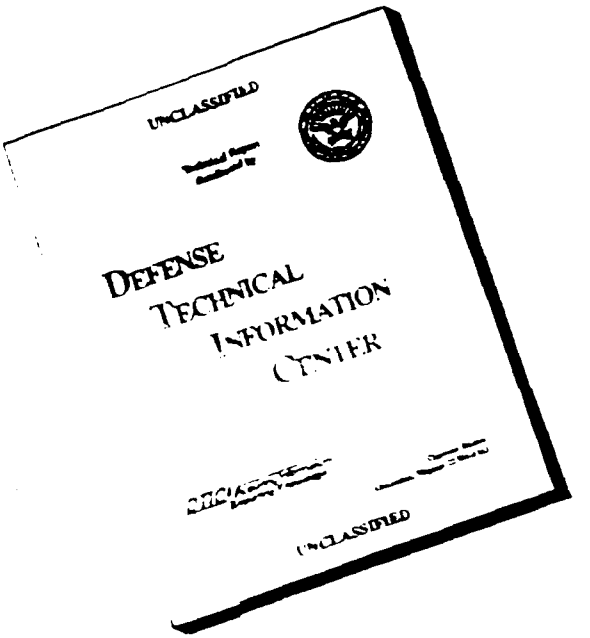

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COVER SHEET

Environmental Assessment
Base Realignment And Other Activities at
Bergstrom Air Force Base, Texas

Responsible Agency: United States Air Force

Actions: In response to the recommendations of the Defense Secretary's Commission on Base Realignment and Closures to legislative requirements in the Base Realignment and Closure Act (Public Law 100-526) nine EC-130 aircraft will be relocated to Bergstrom AFB. Other actions proposed for Bergstrom AFB during this time period are also covered in this document. These include the drawdown of two RF-4 squadrons, and the conversion of Air Force Reserve F-4 aircraft to F-16 aircraft.

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Designation: Final Environmental Assessment (EA)

Abstract: This environmental assessment evaluates the potential environmental impacts associated with base realignment activities at Bergstrom AFB. Nine EC-130 Aircraft and 490 associated personnel will be relocated from Davis-Monthan AFB to Bergstrom AFB. Other actions proposed for the same time frame include the deactivation of two RF-4 squadrons, and the conversion of one Reserve squadron from F-4s to F-16s. The cumulative impact of these actions would be a slight reduction in air emissions and noise. All impacts are considered to be insignificant.

EXECUTIVE SUMMARY

The actions evaluated in this environmental assessment (EA) involve three separate actions or activities. The USAF will relocate nine EC-130H aircraft and associated personnel and equipment of the 41st ECS from Davis-Monthan AFB to Bergstrom AFB, TX beginning in January 1990. This action is a result of the Base Realignment and Closure Commission Report. Two other actions, deactivation of two RF-4C squadrons and conversion of 21 F-4s for 18 F-16s for the Air Force Reserve unit. These latter two actions are proposed to occur within the same time frame of the EC-130 beddown and therefore are included in the analysis to evaluate the cumulative effects. If all actions are completed as proposed, there will be a reduction of 26 aircraft for a new total of 82 aircraft assigned to the base.

The realignment of EC-130 aircraft to Bergstrom is being carried out in compliance with the Base Realignment and Closure Act, Public Law 100-526. Provisions of this act exempt the Air Force from considering alternatives.

The purpose of the deactivation is to retire the aging RF-4C aircraft from the Air Force inventory, and reduce operating costs for the Tactical Air Command (TAC). These F-4 aircraft are some of the oldest F-4s in TAC and are no longer cost effective to retain. TAC operating costs must be reduced to help meet Congressionally mandated cuts in the Department of Defense (DOD) budget. The proposed action would enable the USAF to implement its portion of these budget cuts.

Alternatives considered for the deactivation include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because it does not satisfy Congressionally mandated DOD budget cuts. Delaying the action is also not viable because budget cuts must be met for the current FY. Delaying this action would further complicate the reduction schedule at a later date. A force structure reduction is the best way to make cuts of the required magnitude and timing. The best place to make such a reduction is with the RF-4C at Bergstrom AFB, due to aircraft age and operating costs.

The purpose of the aircraft conversion is twofold: first to retire the aging F-4E aircraft from the Air Force Reserve inventory, and second to upgrade the aircraft being used by the Air Force Reserves. These F-4 aircraft are among the oldest fighters in the Air Force Reserves. With operating costs double those of modern fighters, it is more cost effective to replace these aircraft. The proposed action would enable the USAF Reserves to eliminate these especially costly-to-operate aircraft.

Alternatives considered for the conversion include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because the current F-4 aircraft are old and need to be replaced. Delaying the action is also not viable for the same reason. The best place to convert from the F-4 to the F-16 at this time is Bergstrom AFB.

The cumulative effect of all the actions would have a negligible environmental impact. A summary of the impacts follows:

Climate: No impact.

Geology/Water Resources: No impact.

Soils: No impact.

Air Quality: Insignificant decrease in air emissions.

Biological Resources: No impact.

Environmentally Sensitive Areas: No impact.

Land Use and Land Compatibility: Slight reduction in noncompatibility.

Noise: Insignificant decrease.

Cultural Resources: No impact.

Socioeconomic: The impacts were assessed as insignificant since they are short-term in view of the rate of community growth.

Aircraft Safety: No impact.

Hazardous Waste: Insignificant increase in handling of hazardous waste due to the association of hydrazine with F-16 aircraft.

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Acronyms and Abbreviations

AFB - Air Force Base

AGL - Above Ground Level

AICUZ - Air Installation Compatible Use zone Study

APZ - Accident Potential Zone

ARTCC - Air Route Traffic Control Center

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

EA - Environmental Assessment

ECS - Electronic Combat Squadron FY - Fiscal Year

IFR - Instrument Flight Rules

IRP - Installation Restoration Program

LTO - Landing and Take-off

MOA - Military Operations Area

MTR - Military Training Range

NAAQS - National Ambient Air Quality Standards

NRHP - National Register of Historic Places

OHSPC - Oil and Hazardous Substance Pollution Contingency Plan

PAA - Primary Authorized Aircraft

RAPCON - Radar Approach Control

RCRA - Resource Conservation and Recovery Act

SPCC - Spill Prevention Control and Countermeasures

TAC - Tactical Air Command

TFG - Tactical Fighter Group

TRW - Tactical Reconnaissance Wing

1.0 INTRODUCTION

The Defense Secretary's Commission on Base Realignment and Closure (Commission) was chartered on 3 May 1988 by the Secretary of Defense to recommend military installations within the United States, its commonwealths, territories, and possessions for realignment and closure. Subsequently, the Base Realignment and Closure Act (Public Law 100-526, 24 October 1988) endorsed the Secretary's Commission and required the Secretary of Defense to implement its recommendations unless he rejected them in their entirety or the Congress passed, and the President signed, a Joint Resolution disapproving the Commission's recommendations.

The primary criteria used by the Commission for identifying candidate bases was the military value of the installation. However, cost savings were also considered, as were current and projected plans and requirements for each military service. Lastly, the Commission focused its review on military properties and their uses, not military units or organizational/administrative issues.

On 29 December 1988, the Commission recommended the realignment and closure of 145 military installations. Of this number, 86 are to be closed fully, five are to be closed in part, and 54 will experience a change (either and increase or decrease) as units and activities are relocated.

On 8 January 1989, the Secretary of Defense approved those recommendations and announced that the Department of Defense would implement them. The Congress did not pass a Joint Resolution disapproving the recommendations within the time allotted by the Act.

Therefore, the Act now requires the Secretary of Defense, as a matter of law, to implement those closures and realignments. Implementation must be initiated by 30 September 1991, and must be completed no later than 30 September 1995. Thus the decision has been made to move the nine EC-130 aircraft to Bergstrom AFB.

The realignment will involve the relocation of nine EC-130H aircraft and associated equipment and personnel from Davis-Monthan AFB to Bergstrom AFB. The 41st ECS realignment is the only one of the three actions being evaluated in this EA that is being carried out in compliance with the requirements of the Base Closure and Realignment Act. The provisions of this act exempt the Air Force from considering alternatives to the 41st ECS realignment.

In addition to this action, the United States Air Force Tactical Air Command (TAC) is proposing the following actions at Bergstrom AFB during the same time frame:

(1) to deactivate two RF-4G training squadrons
and
(2) to convert an Air Force Reserve unit from F-4 to F-16 aircraft.

The purpose of the proposed deactivation of two RF-4C training squadrons (components of the 67th Tactical Reconnaissance Wing) is to retire 32 aging RF-4C aircraft from the Air Force inventory, and reduce operating costs for the TAC. Alternatives considered for the deactivation include taking no action, delaying the action, and considering another unit.

The conversion of the Air Force Reserve unit (924th Tactical Flight Group) from F-4 to F-16 aircraft is consistent with Air Force policy to upgrade the capability of Reserve and operational units with advanced combat fighters (U.S. Air Force 1981). The 21 F-4 aircraft, that will be replaced by 18 newer F-16 aircraft, will be retired from service. Alternatives considered for the conversion include taking no action, delaying the action, and considering another unit.

This Environmental Assessment (EA) describes the impacts of each of the three actions on climate, air quality, soils, geology, water resources, biological resources, environmentally sensitive areas, land use and land capability, noise and vibration, cultural resources, and the local economy. Background environmental and economic data are presented to provide a description of the affected environment and socioeconomic situation.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTIONS

2.1 Description of Proposed Actions and Alternatives (DOPAA)

2.1.1 Purpose and Need for 41st ECS Realignment

The realignment of the 41st ECS is being carried out to permit realignment of the 27th Tactical Air Support Squadron from George AFB in California to Davis-Monthan AFB. This realignment is necessitated by the closure of George AFB. The closure and resultant realignments are being carried out in compliance with the requirements of the Base Closure and Realignment Act (Public Law 100-526). Provisions of this act exempt the Air Force from consideration of other alternatives, with respect to this realignment.

2.1.2 Purpose and Need for the Deactivation of Two RF-4C Training Squadrons

The purpose of the deactivation is to retire the aging RF-4C aircraft from the Air Force inventory, and reduce operating costs for the Tactical Air Command (TAC). These F-4 aircraft are some of the oldest F-4s in TAC. Their high operating costs make it no longer cost effective to retain these aircraft. TAC operating costs must be reduced to help meet Congressionally mandated cuts in the Department of Defense (DOD) budget. The proposed action would enable the USAF to implement its portion of these budget cuts in a couple of ways: (1) overall force structure reduction, and (2) elimination of especially costly-to operate aircraft.

Alternatives considered for the deactivation include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because it does not satisfy Congressionally mandated DOD budget cuts. Delaying the action is also not viable because congressionally mandated budget cuts must be met for the current FY. Delaying this action would further complicate the reduction schedule at a later date. While other means of reducing USAF operating costs exist, none are as feasible as replacements for the proposed action. A force structure reduction is the

best way to make cuts of the required magnitude and timing. The best place to make such a reduction is with the RF-4C at Bergstrom AFB, due to aircraft age and operating costs. Considering another unit would just shift the proposal to another location and the proposed actions would be scheduled for a later date for Bergstrom AFB.

2.1.3 Purpose and Need for the Replacement of F-4 Aircraft with F-16 Aircraft

The purpose of the aircraft conversion is twofold: first to retire the aging F-4E aircraft from the Air Force Reserve inventory, and second to upgrade the aircraft being used by the Air Force Reserves. These F-4 aircraft are among the oldest fighters in the Air Force Reserves. With operating costs double those of modern fighters, it is more cost effective to replace these aircraft. The proposed action would enable the USAF Reserves to eliminate these especially costly-to-operate aircraft.

Alternatives considered for the conversion include taking no action, delaying the action, and considering another unit. The no action alternative is not a viable option because the current F-4 aircraft are old and need to be replaced. Delaying the action is also not viable because of the same reason. The best place to convert from F-4s to F-16s at this time is Bergstrom AFB. Considering another unit would just shift the proposal to another location and the proposed action would be reprogrammed for a later date at Bergstrom AFB.

2.1.4 Cumulative Changes Resulting from the Implementation of the Three Actions

Implementation of these activities will result in a decrease of 26 aircraft located at the base and a concomitant decrease in numbers of sorties flown. Table 1 displays the aircraft mix, sorties per month and approximate total annual flying hours at Bergstrom AFB before and after implementation of the actions. There will be an approximate 18 percent reduction in the number of sorties.

Table 1.

Comparison of Current and Proposed
Aircraft Assignments and Flying Activity

**Aircraft Assigned to Bergstrom AFB
Before Conversion/Realignment**

Organization	Aircraft Type	Number of Aircraft	Number of Sorties/Month	Approximate Total Annual Flying Hours
67th TRW	RF-4C	87	1096	21,040
924th TFG	F4-E	21	288	5,530
	TOTAL	108	1384	26,570

**Aircraft Assigned to Bergstrom AFB
After Conversion/Realignment**

Organization	Aircraft Type	Number of Aircraft	Number of Sorties/Month	Approximate Total Annual Flying Hours
67th TRW	RF-4C	55	756	14,520
924th TFG	F-16	18	280	5,380
41st ECS	EC-130H	9	105	2,202
	TOTAL	82	1141	21,290

It is important to note that a majority of flying time associated with each sortie is involved with flight over sparsely occupied areas such as West Texas and the Gulf of Mexico. Only a small percentage of flight time is involved with flight over occupied areas such as Bergstrom AFB and the adjacent Austin area.

Rates of practice approaches per sortie will remain about the same for the 924th TFG after conversion to F-16 aircraft. These units typically average four Landing and Takeoffs (LTO) maneuvers per sortie. Total practice approaches for the 67th TRW should decrease after deactivation of the two student training squadrons. The EC-130H aircraft will average two additional LTO maneuvers per sortie, for a total of six operations per sortie. However, the total number of LTO maneuvers conducted per month will be substantially reduced, due to the total reduction of 26 aircraft at Bergstrom AFB which would occur due to implementation of the actions.

There is no proposed change in the mission of the Reserves. The 924th will continue to utilize the same low-level routes, Military Operating Areas and ranges currently used by the F-4s as discussed in Section 3.12.

Noise levels would be expected to decrease slightly due to the realignment and conversion at Bergstrom AFB. This would be attributed to a decreased number of sorties and the replacement of the F-4 with the quieter F-16 aircraft.

Air emissions, attributed to aircraft operations, would be expected to decrease due to the lower number of sorties and the replacement of the F-4 with the more fuel efficient F-16. Table 2 contains a list of emissions associated with each type of aircraft operating or projected to operate at Bergstrom AFB. It is noted that the F-4 produces higher concentrations of air pollutants per equal amount of fuel than the F-16.

There is a rearrangement and construction upgrade (renovation) program associated with realignment at Bergstrom AFB. The estimated amount for this renovation is $13.5 million for the realignment, and $6.5 million for the reserve unit F-16 replacement. This plan consists of six facility upgrades:

Table 2.

Bergstrom AFB Engine Types and Emissions

Aircraft	Engine Type	Engine Mode	Fuel Cons. (1000 lb/hr)	Emissions per Engine (lbs/1000 lbs fuel) CO	HC	NOX	PART	# of Eng.
EC-130	T56-07	Idle	0.72	32.0	21.00	3.90	0.83	4
		Approach	0.83	22.2	12.40	4.40	0.97	
		Intermediate	1.85	2.40	- 0.50	9.20	0.51	
		Military	1.96	2.10	0.40	9.30	0.50	
F-16	F100-200	Idle	1.04	34.00	3.20	3.30	0.12	1
		Approach	3.00	5.80	1.90	6.70	0.27	
		Intermediate	5.11	1.60	0.10	9.80	0.47	
		Military	10.58	0.90	0.10	27.00	0.34	
		Afterburn	51.73	4.00	0.01	3.10	0.15	
F-4E	J79-17	Idle	1.06	66.00	23.10	2.70	0.18	2
		Approach	3.50	15.40	0.50	4.50	0.51	
		Intermediate	7.00	7.80	0.10	5.80	0.72	
		Military	9.82	5.20	0.10	10.60	0.92	
		Afterburn	34.95	4.00	0.01	3.10	0.15	

CO = Carbon Monoxide
HC = Waste Hydrocarbons
NOX = Nitrogen Oxides
PART = Particulate Matter

Source: U.S. Air Force 1985.

- security and simulator facility
- secure aircraft parking area
- central security control facility
- ECM/computer center
- alter various facilities
- warehouse storage facility

All facility upgrades would involve renovation of existing facilities There would be no demolition activities and no substantial new construction involved. The proposed renovations would not involve previously undisturbed land. Also, all proposed construction/renovation activities would be conducted in accordance with the Bergstrom AFB Air Installation Compatible Use Zone Study (USAF 1987), which contains plans for the continued renovation and reuse of existing facilities at Bergstrom AFB.

Also associated with the base realignment of the nine EC-130H aircraft will be an increase of approximately 490 active duty military personnel. There will be no change in personnel due to the proposed F-4 to F-16 conversion, or to the proposed deactivation of the two RF-4C training squadrons. No change in civilian or reserve personnel is proposed.

2.2 Environmental Consequences of Proposed Actions and Alternatives

Environmental consequences of the realignment/conversion would be an overall reduction in noise levels associated with base operations. The noise reduction would be attributed to replacement of the F-4s with the quieter F-16s, and to the reduction of the total number of sorties associated with the deactivation of the two units. The addition of the EC-130H aircraft without any changes in current aircraft operations would result in almost imperceptible increase in day-night average noise level in the areas surrounding the installation.

Increased emissions associated with the realignment of the 41st ECS will be offset by a reduction in emissions from deactivation of the two 67th TRW squadrons and converting the 924th TFG to F-16s. This would result in a total

cumulative reduction in emissions. Air emission data (Table 2) illustrates that the military engine mode fuel flow for the F-4 and the F-16 are approximately the same. However, the emissions per engine of the F-4 are typically greater than the emissions of the F-16 (except for NOX). Also the F-4 has two engines compared to one on the F-16. Therefore, the emissions associated with each F-4 would be twice the values listed in the table and therefore exceed (equal in the case of NOX) the emissions associated with the F-16. Emissions of the EC-130H aircraft would be similar to that of the F-16 aircraft. This is based on the estimation of the emissions generated from the four (4) T5-07 engines and the fuel consumption under the military power mode.

The environmental consequences as a result of construction associated with the realignment would be negligible. To accommodate the realigned EC-130H aircraft, some minor new construction is anticipated over the next three years. No new construction is anticipated with the F-4 to F-16 conversion. The units being converted are expected to utilize existing facilities. No construction is anticipated with the deactivation of the two training squadrons.

Little impact on land use in the area surrounding the base due to the actions would be expected due to the decreased number of sorties and the use of quieter aircraft.

2.3 Mitigation Measures

There are no mitigating measures to be associated with the Base Realignment and Closure action, or the proposed actions. Noise levels and air emissions attributed to current base operations should decrease upon implementation of the actions. Operations at Bergstrom AFB associated with the realignment/ conversion involve routine practices which reduce noise/pollution impacts ("hush houses", flight scheduling. etc.). These, however, are not mitigating activities.

2.4 Preferred Alternative

The base realignment of nine EC-130 aircraft into Bergstrom AFB is a Commission directed action, and no other alternatives were considered.

The alternatives considered to the proposed actions are:

(1) Deactivation of two RF-4 Units: Take no action, delay the action, or deactivate units at other locations.
(2) F-4 to F-16 conversion - Take no action and continue to use the F-4 aircraft, delay the action, or convert units at another location.

Of the above-mentioned alternatives, the preferred alternative is the proposed action. The deactivation of two RF-4 units is for economical reasons. The F-4 to F-16 conversion is consistent with Air Force policy of upgrading Reserve Units. Implementation of the preferred alternative permits an increase in the mission readiness of the Reserve Unit and will allow a slight impact on the local economy associated with the construction and upgrade of facilities and the increase in military personnel. The no action alternative, and the alternative to consider a unit at another base would have no impact on the environment. The delay action alternative would have the same impact as the proposed action, just at a later date. For these reasons the alternatives will not be carried through the rest of the document.

3.0 AFFECTED ENVIRONMENT

3.1 General Information

Bergstrom AFB is located approximately seven miles southeast of downtown Austin in Travis County, Texas. Figure 1 gives the location of Bergstrom AFB in regional perspective while Figure 2 shows its local orientation. The Bergstrom AFB installation layout is presented in Figure 3. The installation is adjoined on the north and northwest by the Austin city limits. The community of Del Valle borders the base on the northeast side of the base. Several smaller residential communities surround the remainder of the base. There are three other airfields within a 50 mile radius of Bergstrom AFB: Robert Mueller Municipal, Austin, Texas; Robert Gray AAF; and Fort Hood AAF, Kileen, Texas. All instrument flight rules (IFR) of Bergstrom AFB arrival and departure flight routes are coordinated with and controlled by Austin Radar Approach Control (RAPCON) and Houston Air Route Traffic Control Center (ARTCC). In addition to commercial air traffic, there is considerable private traffic in the area. Flight patterns are as shown in Figure 4. Present accident potential zones are as shown in Figure 5.

The mission of Bergstrom AFB is tied to the major base tenants and their primary responsibilities. The 67th Tactical Reconnaissance Wing maintains/operates combat ready forces capable of rapid deployment worldwide with men and equipment ready to conduct reconnaissance missions. The 602D Tactical Air Control Group has the responsibility to command, organize, equip, train, and administer the 602D Tactical Air Control Center Squadron and other support and intelligence squadrons used by the Tactical Air Forces' Commander in planning, directing, and controlling tactical air operations. Headquarters 12th Air Force provides a variety of control over Air Force forces including planning, conducting air operations, training, management, publishing operations orders, etc. The Headquarters 10th Air Force commands, manages, and supervises approximately 20,000 Air Force reservists assigned to 18 flying units and 90 non-flying units located in 24 military installations throughout the United States. The 924th Tactical Fighter Group presently

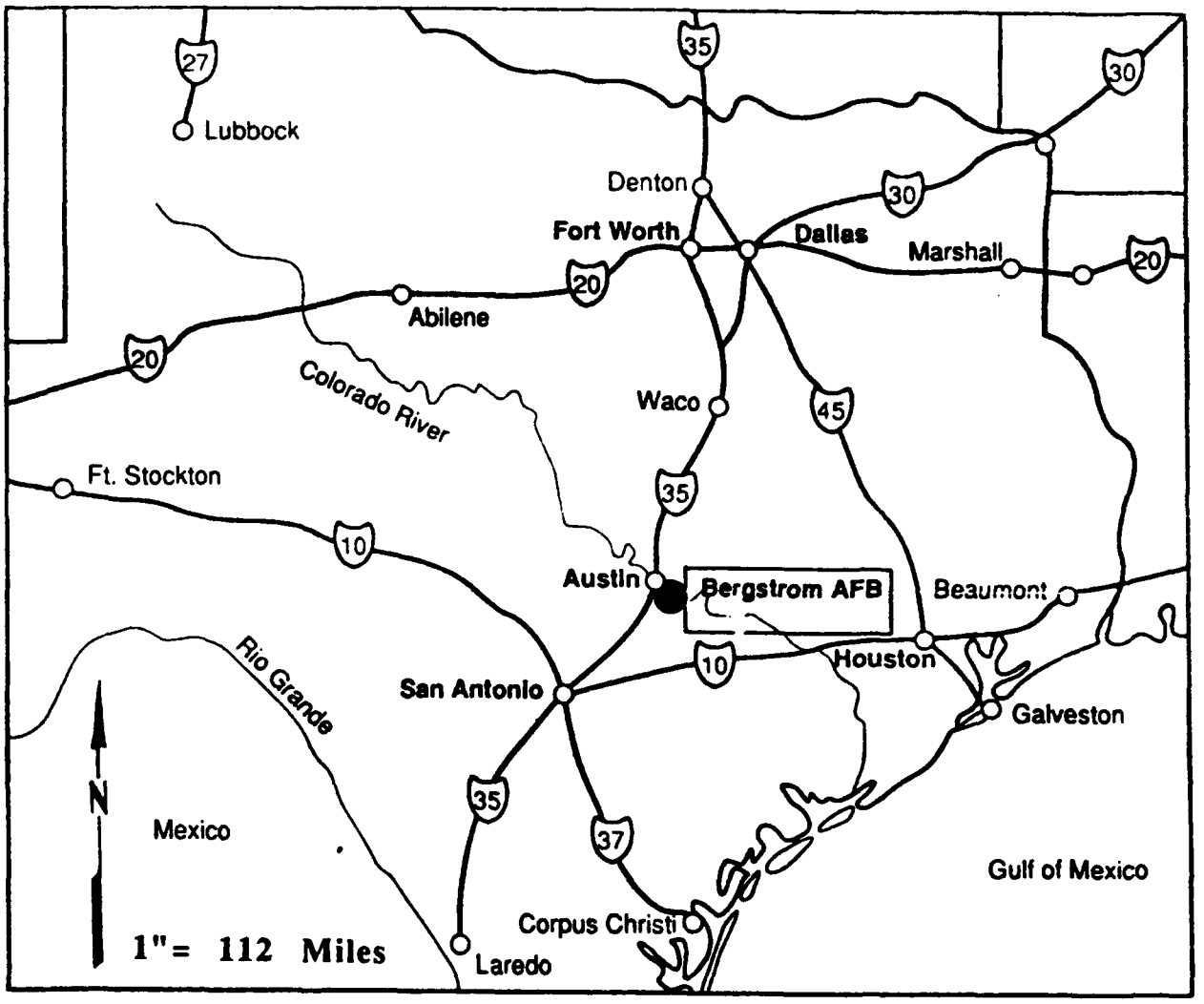

Figure 1. Location of Bergstrom Air Force Base, Texas.

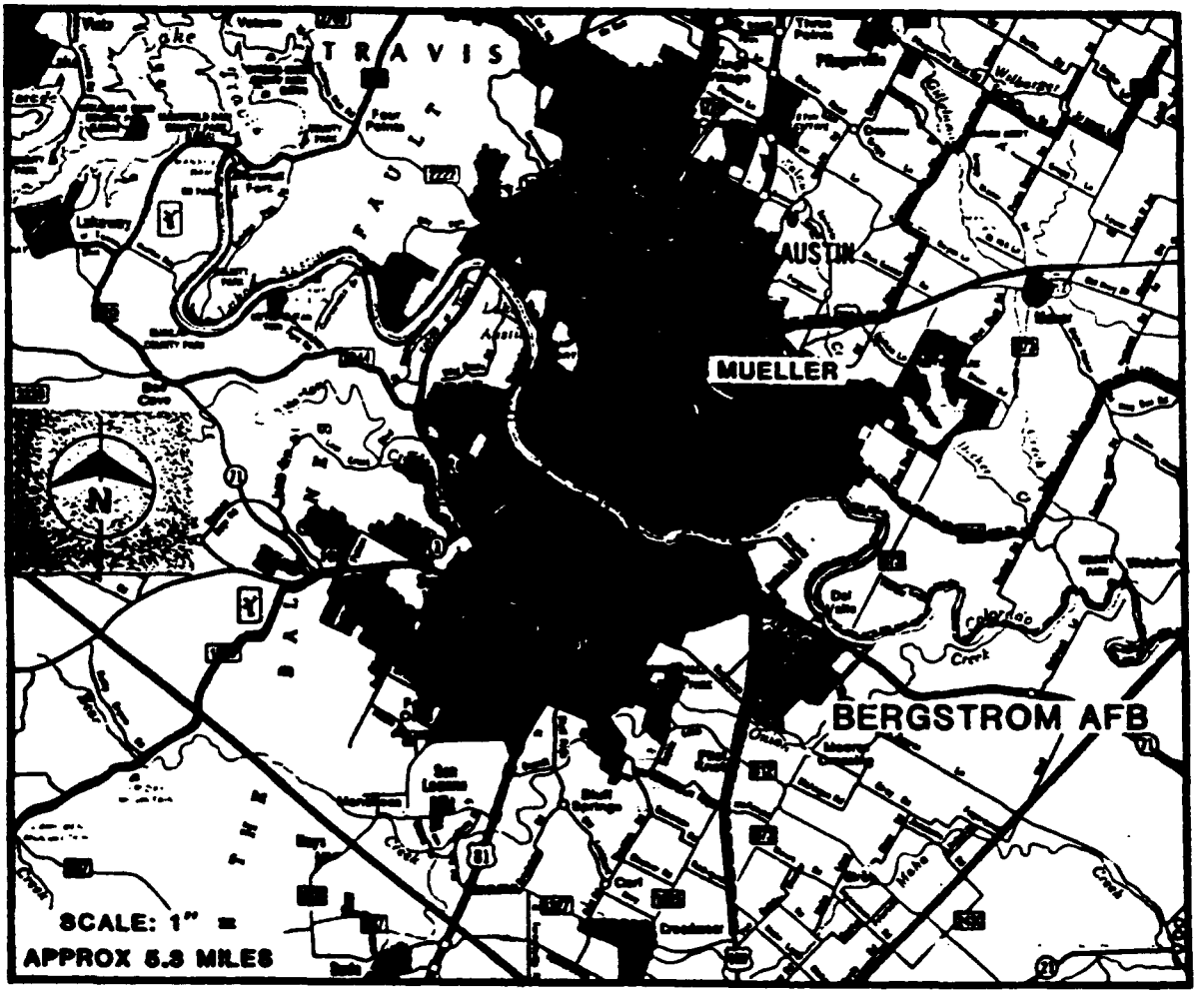

Figure 2. Location of Bergstrom Air Force Base within the Austin city limits.

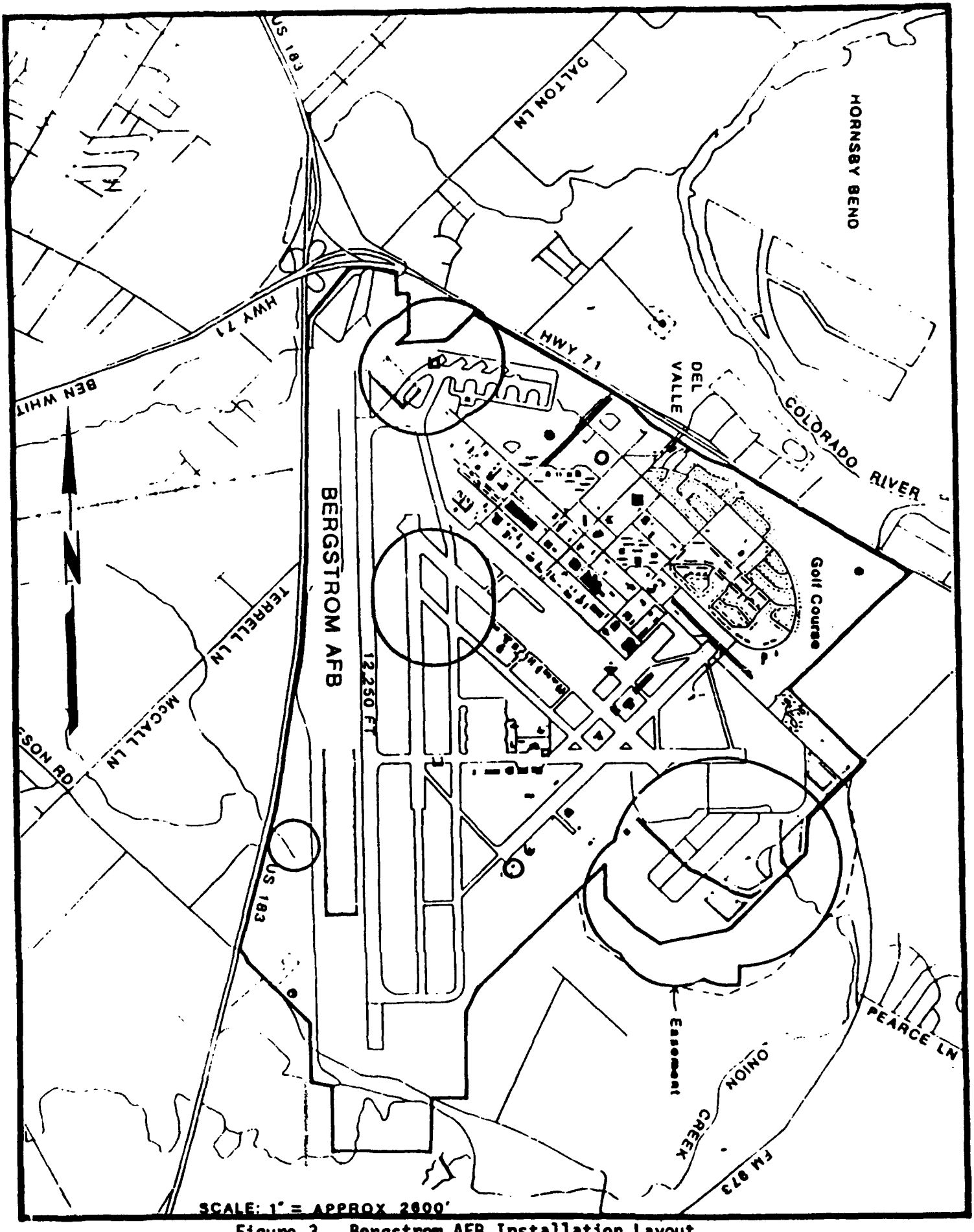

Figure 3. Bergstrom AFB Installation Layout.

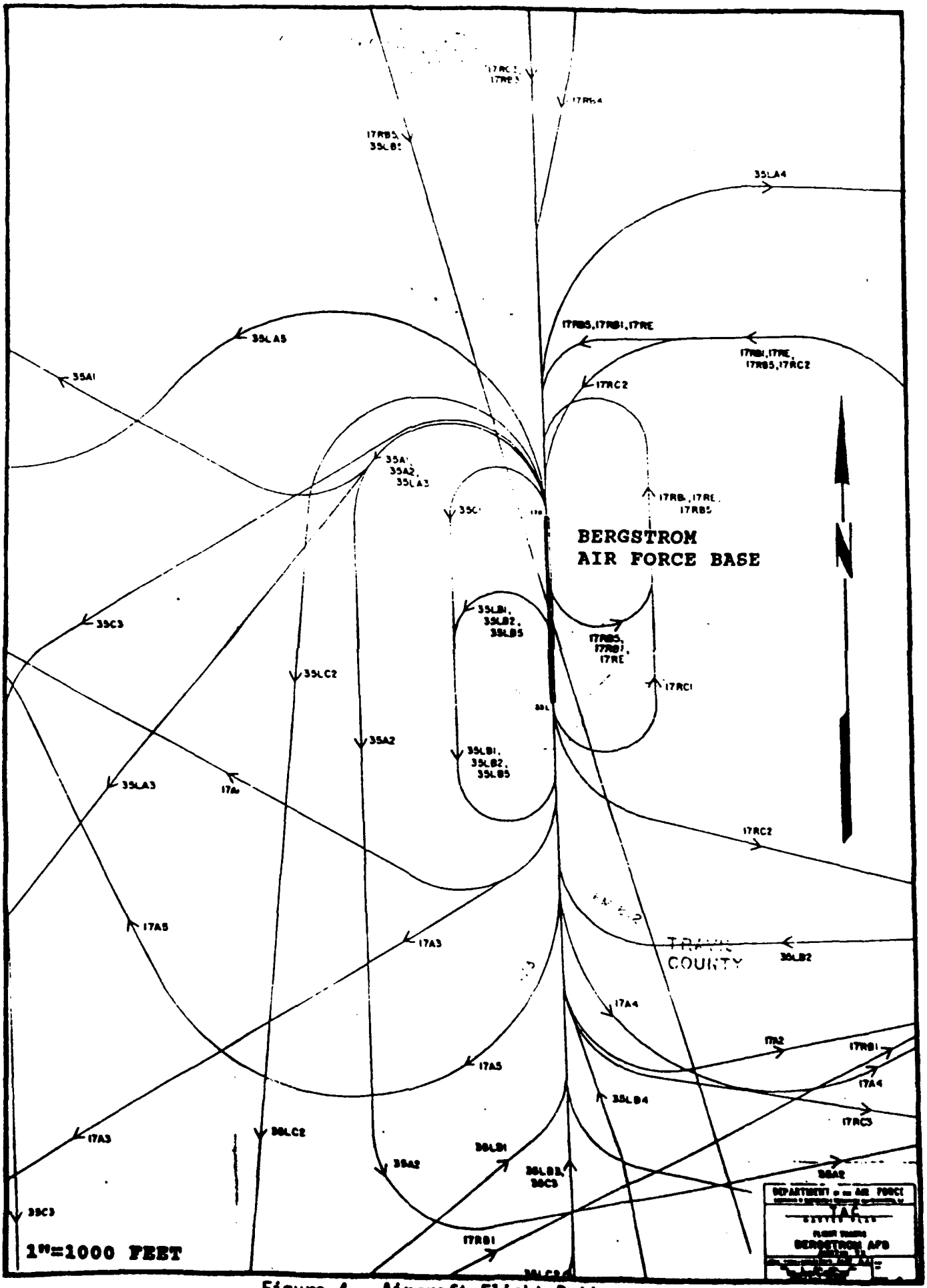

Figure 4. Aircraft Flight Patterns.

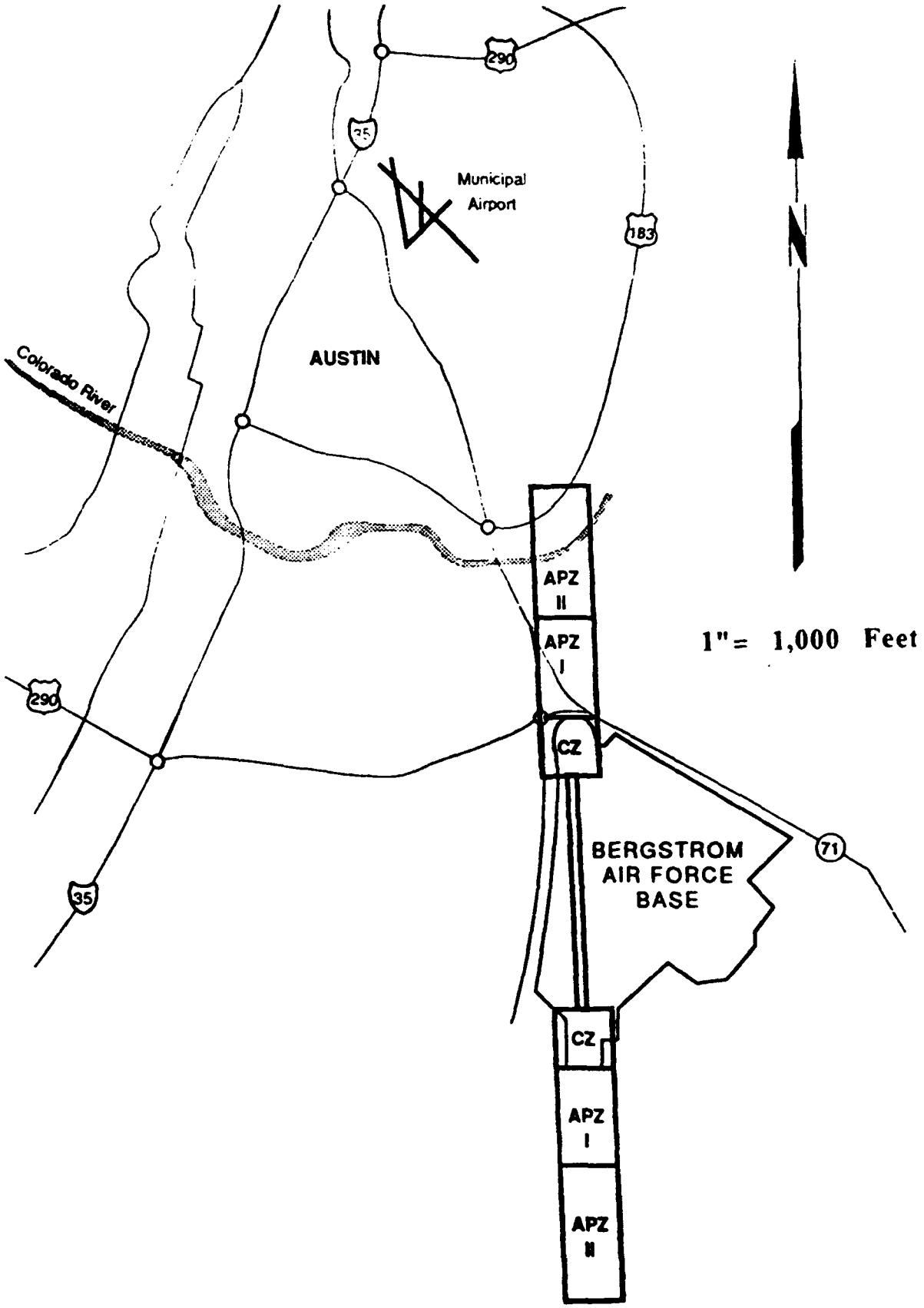

Figure 5. Present accident potential zones, Bergstrom AFB, Texas.

conducts an F-4D training program for 1,361 reservists with capability of short notice deployment.

Particular information about the existing environment around Bergstrom AFB has been detailed in an Environmental Impact Statement (EIS) (U.S. Air Force 1981) involving a proposal to increase flight activity at Bergstrom AFB. Aircraft noise generated was considered the most significant environmental concern at the time. Traffic congestion was the next most serious issue, with air safety, and transient Air Force personnel housing causing some concern.

3.2 Climate

Weather in the area is generally a modified subtropical climate predominantly continental during the winter months and marine during the summer months (Weather Almanac 1977). Normal temperatures range from approximately 50 °F in January to 4 °F in July. Average annual rainfall is approximately 25-27 inches. Northerly winds prevail during most of the winter, while southeasterly winds from the Gulf of Mexico prevail during the summer. Tropical storms occasionally occur in the area bringing strong winds and significant amounts of precipitation during a short period of time.

3.3 Geology/Water Resources

This region is geologically complex. It is primarily underlain by consolidated sedimentary rocks ranging in age from Paleozoic to Tertiary, consisting of largely sandstone, shale, and carbonate rocks (limestone and dolomite, and conglomerate). Water resources of the area are provided by the Colorado River watershed and aquifers underlying what is referred to as the nonglaciated central region of the United States (Heath 1984). Yields of groundwater wells in the area depend upon: (1) the number and size of fractures that are penetrated increasing the supply, (2) rate of recharge, and (3) the storage capacity of the aquifer. The shallow aquifer is salty and not of good quality. However, the deeper aquifer is of good quality.

Potable water supply and wastewater collection and treatment services for Bergstrom AFB are provided by the City of Austin. Potable water is conveyed via a 24-inch diameter water main, and sanitary sewage is collected by an 18-inch diameter trunk sewer. Each of these mains have the capacity to supply or collect approximately eight million gallons per day (8 MGD) of water or wastewater for Bergstrom AFB.

There are no known energy resources or developments nor are there any unique geologic formations or seismic concerns in the immediate area.

3.4 Soils

Soils in the area of the base are generally blackland clay and silty loam derived from the Gulf Coastal Plains and thin limestone soils on the Edwards Plateau. Land form surface as classified by the U.S. Fish and Wildlife Service (1982) is gently sloping 50-80 percent of the area, with local relief 100-300 feet above sea level and 50-75 percent of gentle slope in upland areas. The ecoregion where the base is located is classified as Prairie Division, Oak/Bluestem Parkland section.

3.5 Air Quality

Air quality at the base is good. The region around the base is located within the Austin-Waco Air Quality Control Region. Measured emissions are meeting or exceeding the National Ambient Air Quality Standards (NAAQS) and are in attainment (Appendix A, Butts 1989) for total suspended particulates, sulphur, dioxide, ozone, carbon monoxide, and nitrogen dioxide.

3.6 Biological Resources

The base and surrounding areas are composed of several vegetation regimes (McMahan, Frye and Brown 1984). Included are crops and urban areas, post oak woodland forest and live oak/mesquite/ash juniper parks. In lieu of compiling species lists, the reader is referred to the following publications for

specific information about mammals, birds, reptiles/amphibians, and fishes present in Travis County:

- mammals (Hall 1 81)
- birds (Oberholser 1974)
- reptiles/amphibians (Dixon 1987)
- fishes (Lee et all. 19 0)

No surveys for threatened/endangered species of plants or animals have been conducted at the base. Productivity and diversity of biological resources in the base area are low due to urbanization. Wildlife would generally be encountered along the Colorado River. The United States Department of the Interior Fish and Wildlife Service was contacted regarding the threatened/ endangered species of plants and animals at Bergstrom AFB. They said the following protected species are located in Travis County or are statewide migrants: the black-capped vireo, bald eagle, whooping crane and the threatened Arctic peregrine falcon (Billings). However, there should be no impact from the proposed actions.

3.7 Environmentally Sensitive Areas

There are no prime agricultural lands; forests, or wetlands on the base or within the flight approach areas. There is one city landfill but no hazardous/toxic waste disposal areas on the base or within flight approach areas.

3.8 Land Use and Land Use Capability

Bergstrom AFB operates aircraft under guidelines presented in the base Air Installation Compatible Use Zone Study or AICUZ (U.S. Air Force 1987). AICUZ boundaries and noise contours describe the impacts upon the specific aircraft operational environment as shown in Figure 4. Figure 5 depicts the accident potential zones.

Within the AICUZ, the land use to the east, south and west of the base is predominately agricultural or undeveloped. Commercial and industrial development has occurred north of the base in the Del Valle area and along US 183. Additional development has and is occurring along Ben White Boulevard and Burleson Road. A major industrial complex (Lockheed) is developing on a 700 acre tract north of Burleson Road and west of U.S. 183.

Conditionally compatible and incompatible land use does exist around the base, especially in the area north and west of the airfield (Figure 6). South of the base, only a few land use conflicts currently exist. Many of the conditionally compatible and incompatible land uses depicted in Figure 6 are so designated due to marginal noise levels (65 to 70 dBA) as discussed in Section 3.0.8. The proposed actions would decrease noise levels, potentially removing the incompatible designations from at least the two mixed residential (MR) zones located north and east of Bergstrom AFB. Many conditionally compatible designations in business (B) zones also would potentially be removed.

The City of Austin is the only government body in the airfield environ which has any zoning ordinances or a comprehensive land use plan. The city has jurisdiction on only a small portion of the land surrounding the base. A great proportion of the land in the Bergstrom AICUZ falls solely in the county's jurisdiction and therefore is without any land use regulations.

3.9 Noise

Present noise contours along with the compatible use districts are illustrated in Figure 6. Flight patterns and runway utilization are such as to minimize ISE effects and increase safety of flight operations. Measures currently enacted to promote this effect are listed below:

1. Normal flight operations will be limited to no more than six days per week.
2. Normal flight operations are restricted to the period between 6:30 AM and 10:30 PM.

LEGEND FOR FIGURE 6

Symbol	
A	Agricultural
B	Business
CP	Conservation/Preservation
M	Industrial
P	Public
RI	Single Family Residential
MR	Mixed Single and Multi-Family Residential
MRB	Mixed Residential and Business
MRBM, MRMB	Mixed Residential, Business and Industrial
MBM	Mixed Business and Industrial
MB	Mixed Industrial and Business
MRB	Mixed Residential and Industrial
MRBMP	Mixed Residential, Business, Industrial and Public
MRBP, MRPB	Mixed Residential, Business and Public
RP	Resource Protection
MRBMC	Mixed Residential, Business, Industrial and Conservation
MRP	Mixed Residential and Public
MRBMA	Mixed Residential, Business, Industrial and Agricultural

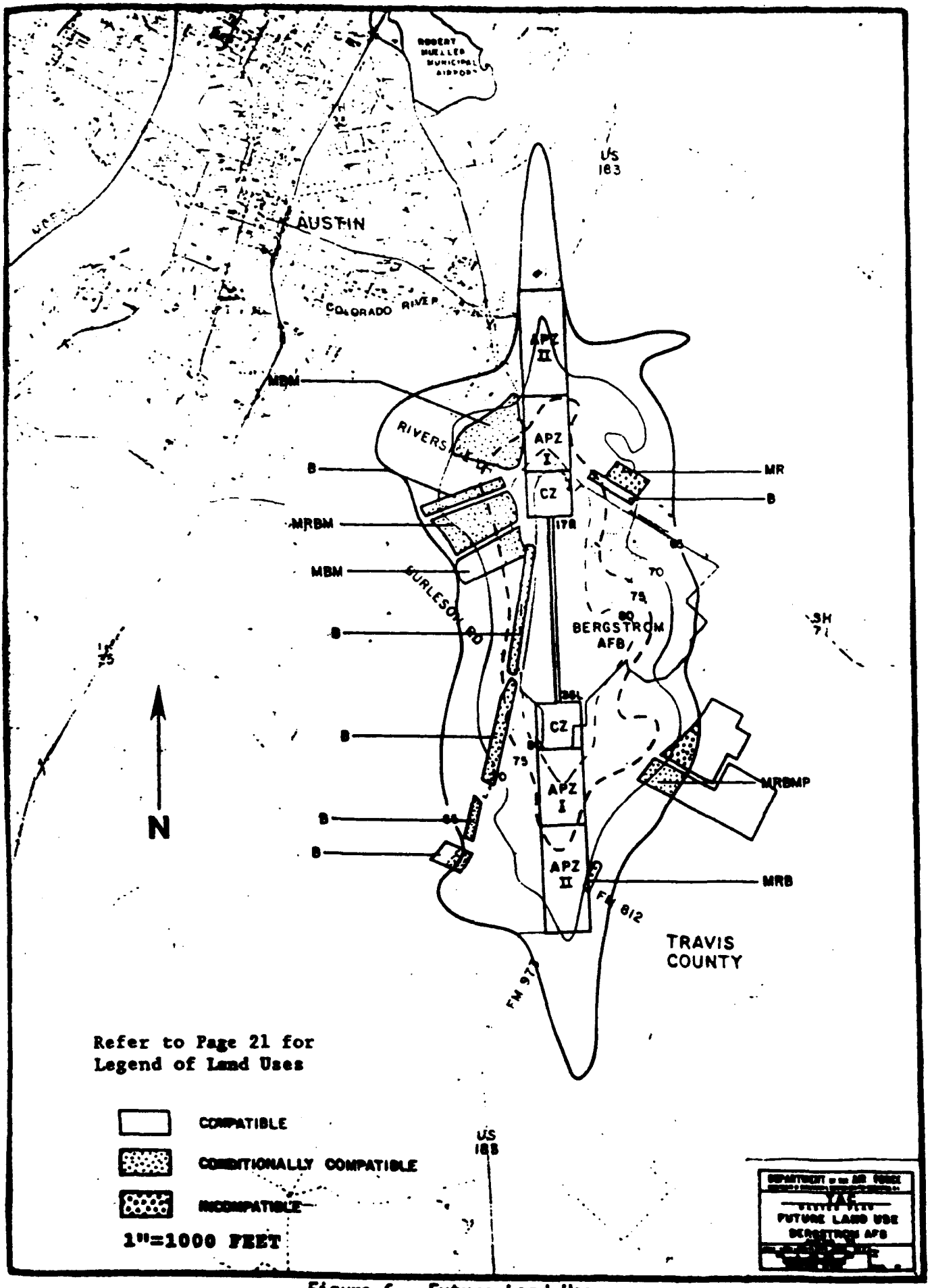

Figure 6. Future Land Use.

3. Ground run-up of aircraft has been restricted to the hours between 6:00 AM and 10:00 PM
4. Operation of aircraft engine test stands has been restricted to the hours between 7:00 AM and 10:00 PM
5. Local flight patterns have been established to minimize airborne noise intrusion into adjacent communities as far as possible.
6. Landing aircraft approach Bergstrom AFB from the south whenever weather conditions permit to minimize air traffic and noise intrusion north of the installation.
7. Aircraft assigned to Bergstrom AFB use reduced power settings and airspeeds, consistent with safe flying operations, during departures from the base
8. Aircraft assigned to Bergstrom AFB climb to the highest assigned altitudes as quickly as possible in an effort to mitigate noise impact.

The proposed actions will lower present noise levels and therefore will not adversely impact land use zones.

3.10 Cultural Resources

Title 36 CFR Part 800.4 requires federal agencies to identify National Register of Historic Places (NRHP) or NRHP-eligible properties located within the area of an undertaking's potential environmental impact and may be affected by that undertaking. Properties potentially susceptible to damage or to any other effect from low flying aircraft are limited to above-ground structures. A previous review of the National Register of Historic Places as published in the Federal Register (6 February 1979 and 55 March 1980) and of NRHP sites in Texas (Steely 1984) indicates that no NRHP-listed properties are located beneath the flight approach areas. The Texas Historical Commission has been contacted in reference to this project and indicated there would be no impact as shown in Appendix C.

3.11 Socioeconomic

The Austin area economy is diverse and is surrounded by government expenditures, the University of Texas, an expanding tourism sector, and an increasing amount of industrialization, primarily related to electronics. The 1980 estimated population for the city and Travis County is 353,200 and 424,000, respectively. The major economic influences upon the Austin economy from Bergstrom AFB are payroll, both military and civilian, and goods and services purchased by the base.

Specific economic resource details are provided in the Bergstrom AFB Economic Resource Impact Statement (U.S. Air Force 1988). During FY 88, the Bergstrom AFB work force totaled about 8,040 employees. These figures include 4,951 active duty Air Force; 1,361 Air Force Reserves; 1,057 appropriated fund civilians; and 671 civilians in other capacities. Approximately 8,000 dependents of Active Duty Air Force personnel reside in the community, as well as 11,000 military retirees. The combined FY 88 payroll totalled nearly $337 million. Total contracting and procurements during FY 88 were over $54 million for goods and services. Counties impacted by these personnel and related expenditures include Travis, Williamson, Lee, Bastrop, Caldwell, Guadalupe, Hays, Comal, Blanco, and Burnett. While not the single greatest contributor, the base is important to the local economy and continues a history of active participation in area social/cultural affairs as well.

3.12 Aircraft Safety

All IFR flights to and from Bergstrom AFB are coordinated with and controlled by Austin Radar Approach Control (RAPCON) and Houston Air Route Traffic Control Center (ARTCC) so as to blend with regional commercial and private traffic safety. Dedicated telephone circuits exist between Bergstrom AFB control tower and the Austin RAPCON, Houston ARTCC, and Robert Mueller Municipal Airport at Austin. Traffic patterns and flight elevations are established for jet, conventional, non-fighter and light aircraft/helicopter traffic so as to reduce accident risk. Military operating areas (MOAs) exist

for scheduled flight training. These MOAs are designed to separate military and civilian activity during training. Military training routes (MTRs) which vary in length and width exist to conduct low altitude, high speed training at airspeeds from 360 to 540 nautical miles per hour and below 10,000 ft above ground level (AGL). The MOA and MTR areas are identified and defined to all airspace users through flight maps and other publications.

Between 1976 and 1979 Bergstrom AFB averaged about one class A ($1,000,000 or more damaged or plane destroyed with crew fatality) aircraft accident per year. Almost all such incidents were on departure, and most remained on the Bergstrom range. Total power loss is the reason for most such accidents. The potential for dropped objects (travel pods, fuel tanks, and electronic countermeasure pods) is remote, also averaging one per year from RF-4C operations. None of these incidents involved civilian population or property.

3.13 Hazardous Waste

State and federal law requires comprehensive control of hazardous materials and hazardous wastes. These statutes include the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response Compensation and Liability Act (Superfund or CERCLA). Bergstrom's Plan 19-1 is based on Department of Defense policy and a series of Defense Environmental Quality Program Policy memorandums. It defines responsibilities; planning; waste determination, accumulation point management; treatment, storage and disposal facility management; package and labeling; training; transportation; and emergency/contingency plans.

In addition to the management plan there is a Spill Prevention and Response Plan in operation at Bergstrom AFB. This plan is intended to fulfill the requirements of a Spill Prevention Control and Countermeasures (SPCC) Plan, an Oil and Hazardous Substance Pollution Contingency (OHSPC) Plan, and the hazardous waste prevention and response requirements. The SPCC portion of the document primarily pertains to spill prevention and includes a discussion of the major types of spill prevention procedures, methods, and equipment

incorporated into the base facilities. The Contingency Plan portion of the document specifies procedures to be followed when responding to releases, accidents, and spills involving oils or hazardous substances. These include spill detection, reporting, containment, cleanup, and disposal procedures. In the event that circumstances warrant implementation of this plan, Bergstrom AFB Disaster Preparedness OPLAN 355-1 will also be implemented. Also included within this document are general procedures for training programs and procedures for plan reviews and updates. The SPR Plan is supported by several vital annexes which provide the specific information associated with the facilities found on Bergstrom AFB.

At the present time, Bergstrom AFB is under a RCRA Compliance Order by the Texas Water Commission issued 19 February 1989. The status of this order is still active. The violations were for: (1) discharge of solid waste to surrounding waters; (2) failure to monitor UST at the entomology shop; (3) inadequate identification of hazardous waste; and (4) no closure plan for oil water separator.

Due to its primary mission of defense, the USAF has long been engaged in a wide variety of operations dealing with toxic and hazardous waste materials. In recognition of this, the Air Force established the IRP to identify the locations and contents of past disposal sites and to eliminate hazards in an environmentally responsible manner.

Active Installation Restoration Programs (IRPs) at Bergstrom AFB as of 26 October 1989 are the following:

1. Fire training area: Design/remedial phase

   Remediation will be accomplished in FY 90 if final feasibility deems it appropriate. Possibility of groundwater contamination by volatile organic carbons (VOCs), petroleum hydrocarbons and lead are being addressed.

2. MOGAS spill at motor pool: Feasibility phase

Sites recommended for further action by the remedial investigation initiated in FY 87 will be included in the feasibility study Primary concerns are possible groundwater contamination from VOCs and petroleum products.

3. Entomology evap pit: Feasibility phase

Sites recommended for further action by the remedial investigation in FY 87 will be included in the feasibility study. Primary concerns are possible groundwater contamination from VOCs and petroleum products.

4. Engine test cell discharge: Feasibility phase

Sites recommended for further action by the remedial investigation in FY 87 will be included in this feasibility study. Primary concerns are possible groundwater contamination from VOCs and petroleum products.

5. Engine test cell discharge: Design/remedial action phase

Design and cleanup of the engine test cell discharge area will be initiated in FY 90 if the current remedial investigation confirms the need for remediation.

4.0 Environmental Consequences and Their Significance

4.1 Climate

The actions and the associated construction will not modify local wind patterns or behavior. Local temperature and precipitation/humidity patterns will not be impacted.

4.2 Geology/Water Resources

There are no unique or special geological features within the base area. There is not a risk of seismic activity or subsidence from the realignment or conversion or related construction. There are no known mineral/energy resources of significant value in the immediate area. The proposed activities will not lead to an increase in rock weathering or degradation.

As previously mentioned in the document, no additional water development is required for the cumulative effect of the action. The local hydrological balance will not be impacted. Local surface waters and watersheds will not be affected. There will not be an increase in sedimentation or flooding potential. Present water quality and groundwater regimes will not be altered.

4.3 Soils

These actions will not impact soil structure, slope stability, bearing capacity or local topography. There may be minor alterations at the site specific locations during associated construction/upgrading of facilities on the base. There will not be a substantial loss of soils due to construction or operational practices.

4.4 Air Quality

Increased amounts of dust may result from construction of facilities associated with the realignment and conversion. Of concern would be the generation and dispersion of air pollutants associated with the newly assigned aircraft.

Table 2 lists the various aircraft, associated engine types, emissions per engine fuel flows. From this information, a rough comparison of the emissions from each aircraft can be made. For example, in the military mode the F-4 and the F-16 have roughly the same fuel flows. However, the F-4 has two engines versus one engine on the F-16. Therefore, the emissions attributed to F-4 are considerably higher than the F-16 (with the exception of NOX, which is roughly the same). The emissions attributable to the EC-130H are roughly equivalent to those attributed to the F-4. This is based on the fuel flow times the number of engines. This gives a factor of 1.5, (multiply the F-4 emissions by this number) which is used to compare the emissions from the EC-130H with the F-4. The consumption of fuel and resultant emissions can vary widely according to the aircraft flying missions.

The overall impact of the realignment and conversion would be a decrease in total air emissions attributable to the decrease in the number of sorties and the replacement of the F-4 aircraft with the more fuel efficient (and lower emission-producing) F-16 aircraft.

4.5 Biological Resources

The projected flight operations are not expected to have any effect upon federally endangered/threatened species or habitats (Short 1989). While there are several state listed species within or potentially within Travis County (Sullivan 1989), the proposed actions will not affect any known habitats or force any species to alter migration routes (Billings). Existing diversity (species and spatial) and productivity of plants and animals within and near the base will not be altered.

4.6 Environmentally Sensitive Areas

There are no prime agricultural lands, forests or wetlands on the base or within the flight approach areas. There is one city landfill but no hazardous/toxic waste disposal areas on the base or within flight approach areas.

4.7 Land Use and Land Capability

The proposed actions will not impact or conflict with existing or planned land uses. Bergstrom AFB has conducted an Air Installation Compatible Use Zone Study (AICUZ). This information is made available to the regional planning authorities to help avoid land use incompatibilities. Future land use based on current zoning and development trends is depicted in Figure 6.

4.8 Noise

Present noise contours are illustrated in Figure 7. Figure 8 illustrates the predicted contours after the realignment. conversion and deactivation. These contours reflect a 5 percent reduction in surface area exposed to 65 dB Day-Night average sound level (DNL) or greater (areas exposed to less than 65 dB DNL are classified for unrestricted use). The proposed action would not cause an increase above the current noise levels.

Construction noise associated with the realignment and conversion will be of minor impact and of short duration.

4.9 Cultural Resources

A search of the files of the Texas Historical Commission and the Texas Archeological Research Laboratory to locate any architectural structures which may have been more recently listed on the NRHP or which may be eligible for inclusion on the NRHP and which may be in the flight approach areas has revealed that only archeological sites are within the projected impact areas. Since these sites are of the prehistoric period and their contexts are largely subsurface. The proposed project will have no impact on them. Communications with the architectural division of the Texas Historic Commission (Appendix C) also revealed that no extant historic structures within the projected are considered to be NRHP eligible. Therefore, the realignment and proposed conversion will have no effect on the cultural resources of the area.

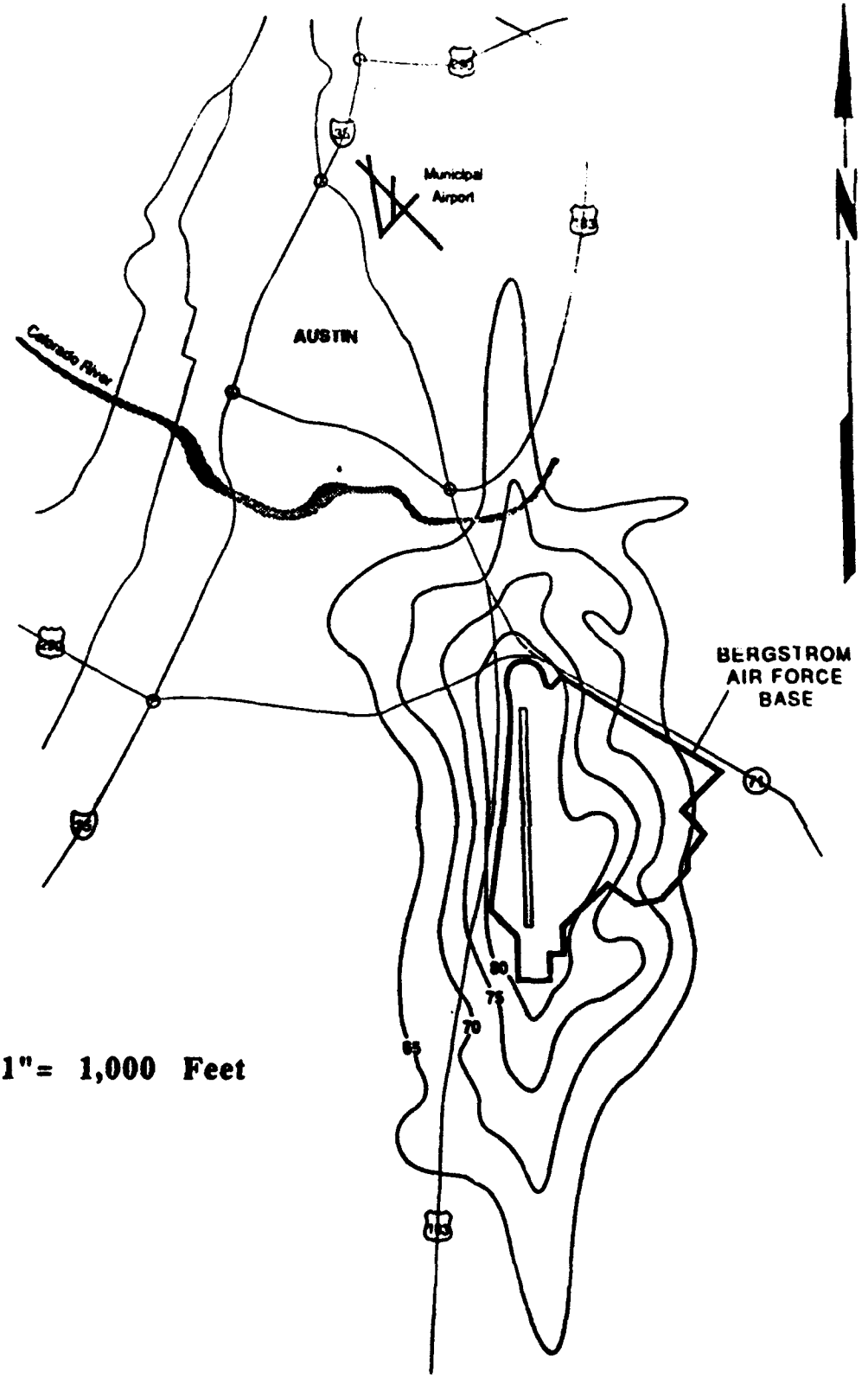

Figure 7. Present noise contours, Bergstrom Air Force Base, Texas.

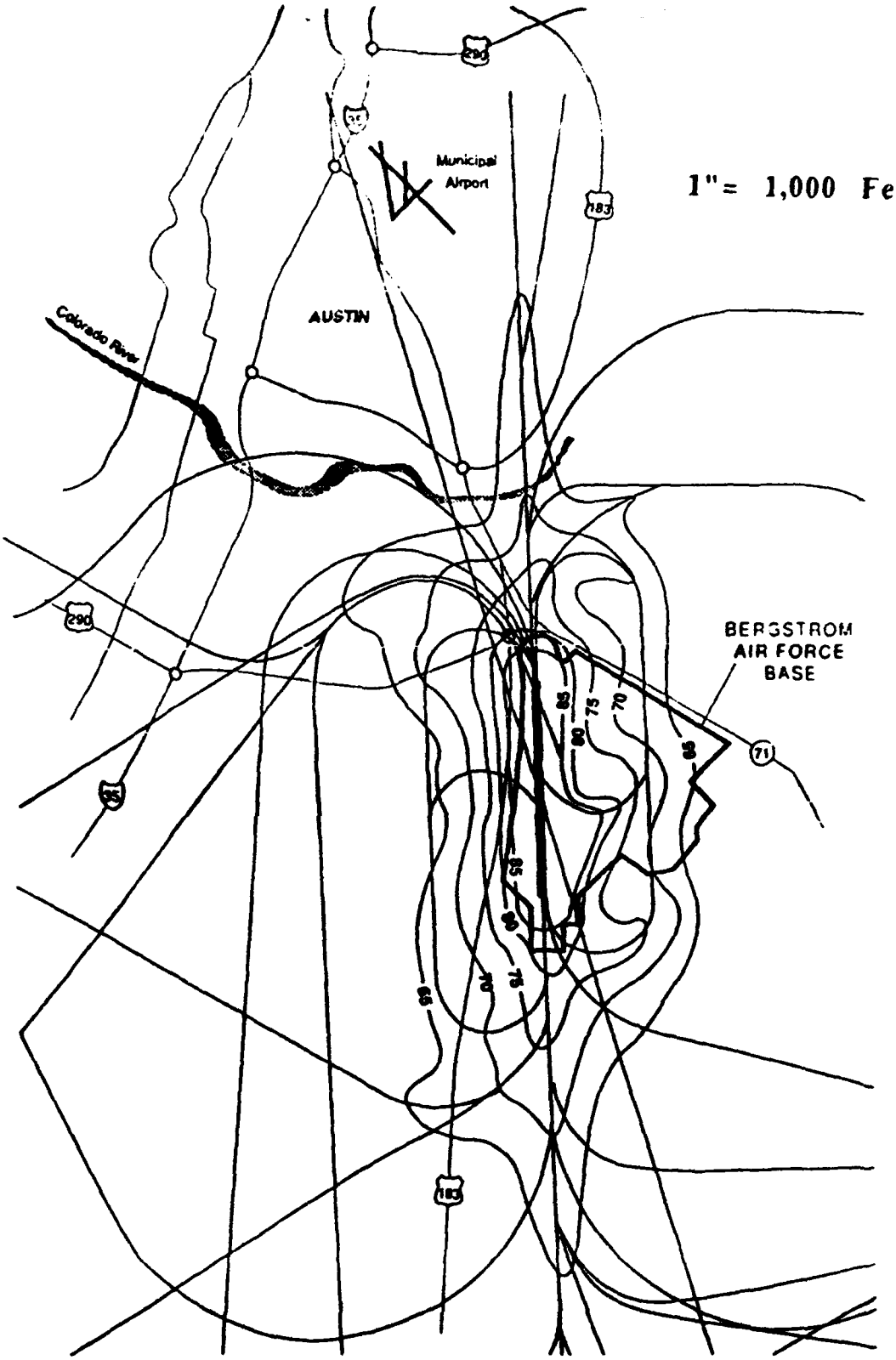

Figure 8. Predicted contours after realignment/conversion, Bergstrom Air Force Base, Texas.

4.10 Socioeconomics

The realignment of the nine EC-130H aircraft will require the assignment of an additional 490 personnel to the base. The increase in payroll should be considered a positive impact to the local community. The constructio.. will make a positive contribution to area business communities. The local population dynamics, land use/settlement patterns, labor supply/employment structure and income distribution/consumption patterns will not be affected by the proposed action Area cultural. social and recreational activities will not be affected by the increase in personnel. It is not expected that area schools and other blic entities will be negatively impacted by the influx of military personnel and their dependents.

4.11 Aircraft Safety

Based upon the projected decrease in aircraft and sorties under the proposed realignment/deactivation and the safety precautions and aircraft accident records maintained. aircraft safety is not considered as a negative impact in the region around Bergstrom AFB.

4.12 Hazardous Waste

The only hazardous material associated with the actions at Bergstrom AFB not already associated with current operations is hydrozine which is associated with the conversion of F-4 to F-16 aircraft. Handling and storage of this, as well as other fuels is covered by the base hazardous waste management plan (Plan 19-1) and is not considered to have any significant impact. Hydrozine handling and use at Davis-Monthan AFB, and most other AFBs is conducted safely and responsibly by trained USAF personnel. These same personnel and procedures from Davis-Monthan AFB would be used at Bergstrom AFB following implementation of the proposed action.

4.13 Adverse Environmental Effects Which Cannot Be Avoided Should All The Actions Be Implemented

There are no adverse environmental effects which cannot be avoided should all the actions be implemented.

4.14 Relationship Between Short-Term Uses of Man's Environment and Long-Term Productivity

The actions described in this document do not alter the long term potential or actual productivity of area ecosystems. Upon implementation of the actions, there would not be a conflict with activities of most short term users of the area environments

4.15 Irreversible or Irretrievable Commitments of Resources

The only irreversible commitments of resources would be the construction materials and labor used during construction and upgrade of facilities.

5.0 LIST OF PREPARERS

The following is a list of those persons having primary responsibility of the preparation of this document.

Name	Experience
Mr. Rick M. Billings	10 yrs environmental studies
Mr. John J. Hoffmann, P.E.	13 yrs environmental studies
Mr. Lyle C. Winnette	5 yrs environmental studies
Mr. Ruben G. Garza	17 yrs environmental studies
Mr. James C. Varnell, P.E.	15 yrs environmental studies

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APPENDIX A

National Ambient Air Quality Standards
Bergstrom AFB, Texas

TEXAS AIR CONTROL BOARD

6330 HWY. 290 EAST, AUSTIN, TEXAS 78723, 512/451-5711

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MARY ANNE WYATT

July 18, 1989

Mr. Rick Billings
Geo-Marine, Inc.
1316 Fourteenth Street
Plano, Texas 75074

Dear Mr. Billings:

The following information concerning air quality is in reference to your inquiry regarding Bergstrom Air Force Base, Travis County, Texas. The attainment status of Travis County, with regard to air quality for air contaminants that have National Ambient Air Quality Standards (NAAQS), is:

Sulfur Dioxide (SO_2) -- Attainment (meets or is better than NAAQS)
Carbon Monoxide (CO) -- Attainment
Nitrogen Dioxide (NO_2) -- Attainment
Total Suspended Particulate (TSP) -- Attainment
Ozone (O_3) -- Attainment

I am enclosing 1988 data summaries for air monitoring done in Travis County.

The proposed realignment of equipment and personnel should not have significant effect on air quality.

If you have any questions on this information, please contact me at the Texas Air Control Board in Austin.

Sincerely,

Larry Butts

Larry Butts
Air Quality Information Group
Quality Assurance Division

Enclosures

PM-10 Summary 1988 (µg/m3)

SAROAD	Site Name	Type	24-Hour High	24-Hour Exc	Annual Arithmetic Mean	Number of Samples	Annual % Data Return	Valid Quarters
NAAQS			#150	#3	50			
Houston								
2560035H	Clinton	S	89	0	*42.3	28	15	1
2560034F	East	S	76	0	32.1	96	94	4
4060002F	Pasadena	S	72	0	*28.5	26	43	2
2330024F	Aldine	D/S	69	0	*25.7	93	76	2
2560054H	Kress	S	64	0	*39.9	16	26	0
2560037H	Crawford	S	46	0	*28.9	7	11	0
Dallas								
1310018H	Morrell	S	77	0	*39.6	56	31	0
1310067H	Toronto	S	56	0	*34.0	7	11	0
1310050H	Convention	S	53	0	*34.3	16	26	0
1310049F	Fish Trap	S	49	0	*25.5	52	28	0
1310020H	Lancaster	S	45	0	*27.0	22	36	0
1310035H	Coit	S	43	0	*25.9	19	31	0
Fort Worth								
1880023F	Worth Hgts	S	71	0	*31.5	28	46	2
1880060H	Geddes	S	58	0	25.7	113	93	4
1880029H	FAA	S	37	0	*21.8	14	23	0
San Antonio								
4570034F	ITC	S	82	0	28.6	120	98	4
4570036F	North	D	61	0	23.2	115	94	4
Austin								
0220010F	Ridgetop	S	76	0	24.8	121	99	4
El Paso								
1700002G	Tillman	S	263	12	61.9	311	85	4
1700041F	Vilas	S	215	4	*93.0	40	22	1
1700037F	UTEP	D	139	0	*41.0	81	44	2
1700038G	Riverside	S	104	0	*56.2	14	23	1
1700029G	Ivanhoe	S	59	0	*30.6	14	23	1
1700045F	Lindbergh	S	57	0	*39.1	14	23	0
1700010G	NE Clinic	S	52	0	*28.8	14	23	1
Corpus Christi								
1150020F	Navigation	S	97	0	29.2	224	90	4
1150012F	Leopard	D/S	51	0	22.9	116	95	4
Lubbock Audit Cailerk								
3340001F	Lubbock	S	180	1	38.1	164	90	4
Galveston-Texas City								
5170002F	Texas City	S	144	0	25.7	139	74	3
Amarillo								
0070002F	Amarillo	S	61	0	*26.5	8	13	0
Odessa								
3910002F	Odessa	S	108	0	26.6	102	84	4
Laredo								
3140014F	Laredo	S	40	0	*23.0	13	21	1

Type: S - SSI; D - Dichot; D/S - Dichot first part of year, SSI remainder of year

\# Expected number of days over 150 µg/m3 not to exceed 3 days over a 3-year period

* Less than 75% data return, not valid for NAAQS comparison

SUMMARY OF 1988 CAMS DATA COMPARED WITH AMBIENT STANDARDS

Air Quality Control Region Number	Station Location	CAMS Number	Ozone Highest Hour	Number of Days with Ozone > 0.12 ppm	Carbon Monoxide 2nd Highest Hour	Carbon Monoxide 2nd Highest 8-Hours (Nonoverlapping)	Sulfur Dioxide 2nd-Highest 24-Hours	Sulfur Dioxide Annual Mean	Sulfur Dioxide 2nd Highest 3-Hours (Nonoverlapping)	Nitrogen Dioxide Annual Mean
	Maximum Allowable by Ambient Air Standards (parts per million)		0.12	Average of one day for 3 yrs	35	9	0.14	0.03	0.5	0.05
3	Austin, Northwest	3	0.12	0			0.01	0.003	0.02	
	North of Austin	25	0.11	0						
	Austin, Downtown	32			5.6	2.6				0.018*
5	Corpus Christi, West	4	0.11	0			0.01	0.002	0.08	
	Corpus Christi, Tuluso	21	0.12	0			0.02	0.002	0.09	

* Annual Mean is not valid since there was less than 75% data return.

APPENDIX B

Threatened/Endangered Species
Bergstrom AFB, Texas

IN REPLY REFER TO

2-12-89-I-331

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Ecological Services
9A33 Fritz Lanham Building
819 Taylor Street
Fort Worth, Texas 76102

July 12, 1989

Mr. Rick M. Billings
Geo-Marine, Inc.
815 Throckmorton St., Suite 306
Fort Worth, TX 76102

Dear Mr. Billings:

This responds to your June 27, 1989 request for information concerning endangered species in the Travis County area around Bergstrom Air Force Base, Austin, Texas. We understand that the proposed project involves relocation of nine aircraft based at Davis-Monthan Air Force Base to Bergstrom and also involves conversion of Air Force Reserve usage of F-4 aircraft to F-16 aircraft. The U.S. Fish and Wildlife Service (Service) has reviewed this proposed action in regard to endangered species.

The following federally protected species are listed for Travis County or are statewide migrants: the endangered black-capped vireo, bald eagle, and whooping crane and the threatened Arctic peregrine falcon. Each of these avian species could generally be expected to be impacted by heavy aircraft activity in their immediate ranges or migratory zones. However, project plans at Bergstrom call for maintaining the existing airspace and flight paths. There will be no expansion of current airspace usage. Additionally, the switch from F-4 to F-16 aircraft will result in reduced exhaust fumes and noise. No habitat removal activities are associated with the proposed project.

In conclusion, the proposed flight operations realignment project by the U.S. Air Force at Bergstrom Air Force Base is not expected to have any impacts on threatened or endangered species or their critical habitats. If you have any questions concerning these comments, please contact Dawn Whitehead of this office at (817) 334-2961.

Sincerely,

J. Cloud, Jr.

for Robert M. Short
Field Supervisor

APPENDIX C

The Texas Historical Commission
Bergstrom AFB, Texas

TEXAS HISTORICAL COMMISSION

P.O. BOX 12276 AUSTIN, TEXAS 78711 (512)463-6100

August 21, 1989

Duane E. Peter
Senior Archeologist
Geo-Marine, Inc.
1316 Fourteenth Street
Plano, TX 75704

RE: Realignment of EC-130H Aircraft to Bergstrom Air Force Base
Austin, Travis County

Dear Mr. Peter:

Thank you for your letter and accompanying documentation regarding the above referenced project. We have reviewed the information you provided and find that the proposed project should not present a serious threat to the cultural resources that are listed or eligible for listing in the National Register of Historic Places.

If you have any further questions, please contact Dwayne Jones of this office at 512-463-6094. Thank you for your consideration.

Sincerely,

James W. Steely
Deputy
State Historic Preservation Officer

JWS/WDJ