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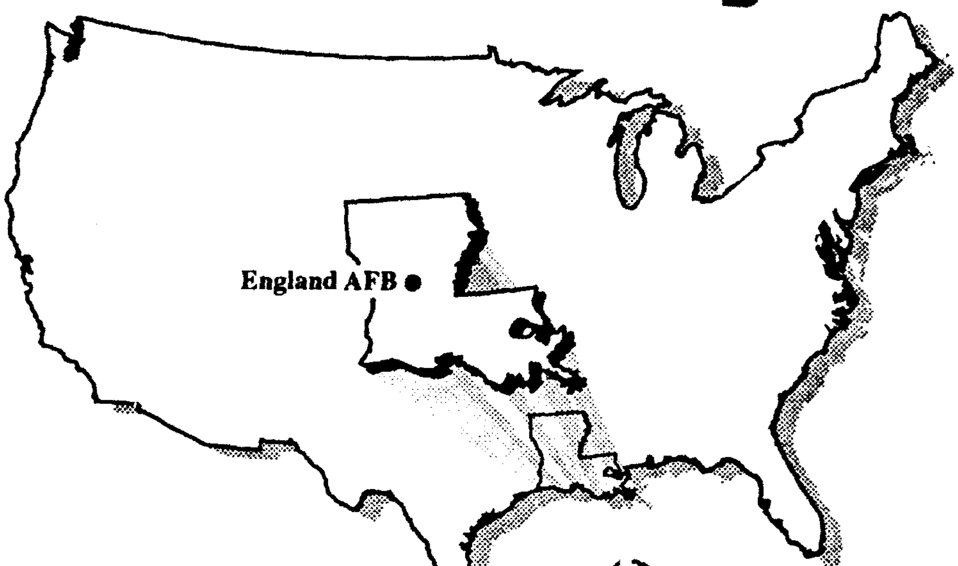

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DISPOSAL AND REUSE OF
ENGLAND AIR FORCE BASE, LOUISIANA

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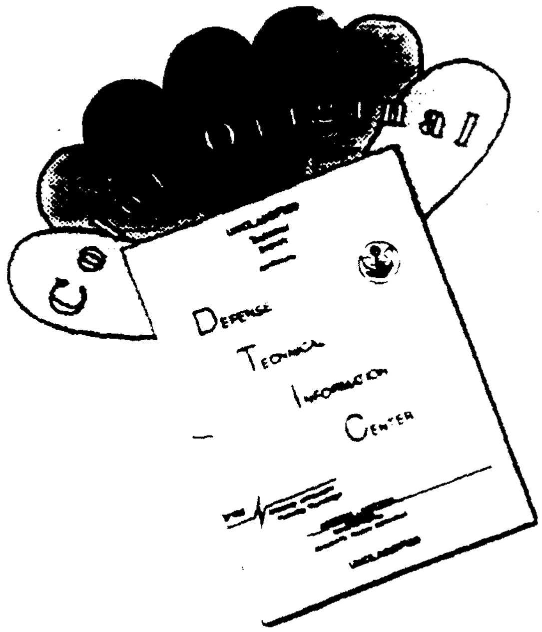

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FINAL

ENVIRONMENTAL IMPACT STATEMENT

DISPOSAL AND REUSE OF ENGLAND AIR FORCE BASE, LOUISIANA

NOVEMBER 1992

COVER SHEET

FINAL ENVIRONMENTAL IMPACT STATEMENT
DISPOSAL AND REUSE OF ENGLAND AIR FORCE BASE, LOUISIANA

a. Responsible Agency: U.S. Air Force

b. Cooperating Agency: Federal Aviation Administration

c. Proposed Action: Disposal of England Air Force Base (AFB), Rapides Parish, Louisiana

d. Written comments and inquiries on this document should be directed to: Lt. Col. Gary Baumgartel, Chief, Environmental Planning Division, AFCEE/ESE, Brooks AFB, TX, 78235-5000, (512) 536-3869.

e. Designation: Final Environmental Impact Statement (FEIS).

f. Abstract: Pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, Title XXIX), England AFB is scheduled for closure on December 15, 1992. This FEIS has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of disposal of the base. Although disposal will have few, if any, direct effects, future use by others will create indirect effects. This document, therefore, includes analyses of the potential impacts that a range of reasonably foreseeable alternative reuses may have on the local community, including land use and aesthetics, transportation, utilities, hazardous materials/wastes, geology and soils, water resources, air quality, noise, biological resources, and cultural and paleontological resources. Reuse alternatives include two aviation alternatives, including the Proposed Action, and two nonaviation alternatives. Impacts of the No-Action Alternative are also considered. Potential environmental impacts associated with the Proposed Action include aircraft- and traffic-related noise, disturbance of native vegetation, increased soil erosion, and increased air pollutant emissions. Proposed mitigations include avoiding native vegetation areas to the extent possible and use of best management practices during construction. Impacts of the alternatives would be similar to those for the Proposed Action, except that the two nonaviation alternatives would not result in increased aircraft-related noise. Because the Air Force is disposing of the property, some mitigation measures are beyond the control of the Air Force. Remediation of Installation Restoration Program sites is, and will continue to be, the responsibility of the Air Force.

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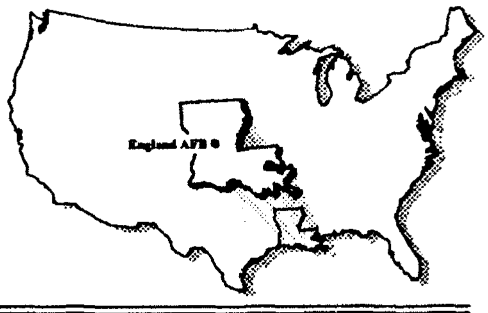


SUMMARY

SUMMARY

PURPOSE AND NEED

England Air Force Base (AFB), Louisiana, was recommended for closure by the 1991 Defense Base Closure and Realignment Commission. The Commission's recommendations were accepted by the President and submitted to Congress on July 12, 1991. Because Congress did not disapprove the recommendations in the time given under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law 101-510, Title XXIX), the recommendations have become law.

The U.S. Air Force is required to comply with the National Environmental Policy Act (NEPA) in the implementation of the base disposal and realignments. The Air Force must now make a series of interrelated decisions concerning the disposition of base property. In support of these decisions, this Environmental Impact Statement (EIS) has been prepared to provide information on the potential impacts resulting from disposal and proposed reuse of the base property. The Federal Aviation Administration (FAA) is a cooperating agency in the preparation of this EIS. FAA's participation in this process will assist them in making related decisions concerning England AFB property. Several alternative reuse concepts have been studied to identify the range of potential direct and indirect environmental consequences of disposal.

After completion and consideration of this EIS, the Air Force will prepare decision documents stating what property is excess and surplus, and the terms and conditions under which the dispositions will be made. These decisions may affect the environment by influencing the nature of the property's future use.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

For the purpose of evaluating potential environmental impacts resulting from the incident reuse of the land, the Air Force has based its Proposed Action on the base reuse plan and airport layout plans prepared by the England Economic and Industrial Development District (or England Authority). These two plans provide a layout of proposed reuses oriented toward development of the base as an industrial airpark with various aviation-related potential reuses, including commercial passenger, general aviation, air cargo, aircraft maintenance, and military, supported by various industrial and commercial reuses. Expansion of the base 9-hole golf course to a regulation 18 holes is also proposed.

In addition to reuse options identified in the reuse plan, the England Authority submitted a proposal to the U.S. Army for consideration of England AFB as the location of the Intermediate Staging Base (ISB) for operations in support of training exercises at the Joint Readiness Training Center (JRTC), which will be relocated in 1993 to Fort Polk, approximately 50 miles west of England AFB. The JRTC conducts 10 rotational exercises per year (with about 4,000 troops per rotation) involving Army light infantry Brigade Task Forces and Special Operations forces, and Air Force Air Mobility Command and Air Combat Command forces. Air operations support would include the airlift of troops and equipment to and from the ISB using C-5, C-141, and Boeing 747 aircraft and deployment of troops to the JRTC using C-130 aircraft and helicopters.

The following alternatives to the Proposed Action are being considered:

- Redevelopment of the base as a general aviation airport with mixed nonaviation uses (**General Aviation Alternative**). The primary difference between this alternative and the Proposed Action is the use of the airfield for only general aviation and air cargo operations.

- Redevelopment of the base as a business/technology center (**Business/Technology Center Alternative**). The primary difference between this alternative and the Proposed Action is the use of the airfield for agriculture, such as hay cropping; farming of regional crops, such as cotton and soybeans; and aquaculture (e.g., catfish or crawfish farms).

- Redevelopment of the base for recreation and tourism (**Recreation/Tourism Alternative**). The primary difference between this alternative and the Proposed Action is the use of the airfield for recreational, commercial, and agricultural uses. Proposed recreational uses would include a theme park/water park, athletic fields, and two golf courses.

- The No-Action Alternative, which entails the base remaining under federal control and being placed in caretaker status.

SCOPE OF STUDY

The Notice of Intent to prepare an EIS for the disposal and reuse of England AFB was published in the *Federal Register* on October 9, 1991. Issues related to the disposal and reuse of England AFB were identified during an ensuing scoping period. A public scoping meeting was held on October 30, 1991, at the Convention Hall in Alexandria, Louisiana. The comments and concerns expressed at this meeting and in written correspondence received by the Air Force, as well as information from other sources, were used to determine the scope and direction of studies and analyses required to accomplish this EIS.

This EIS discusses the potential environmental impacts associated with the Proposed Action and its alternatives. To establish the context in which these environmental impacts may occur, potential changes in population and employment, land use and aesthetics, transportation, and community and public utility services are discussed as reuse-related influencing factors. Issues related to current and future management of hazardous materials and wastes are also discussed. Potential impacts to the physical and natural environment are evaluated for soils and geology, water resources, air quality, noise, biological resources, and cultural and paleontological resources. These impacts may occur as a direct result of disposal and reuse actions or as an indirect result of changes in the surrounding region.

The baseline against which the Proposed Action and alternatives are analyzed consists of the conditions projected at base closure in December 1992 and carried forward over a 20-year period as the No-Action Alternative. Although the baseline assumes a closed base, a discussion of preclosure conditions is provided in several sections (e.g., air quality and noise) to allow a comparative analysis over time. This will assist the Air Force decision-maker and other agencies that may be required to make decisions relating to reuse of England AFB in understanding potential long-term trends compared to historic conditions when the installation was active.

The Air Force has also prepared a separate Socioeconomic Impact Analysis Study on the economic effects expected in the region as a result of the closure, disposal, and reuse of England AFB. That document, although not required by NEPA, will assist the local community in planning for the transition of the base from military to civilian use.

SUMMARY OF ENVIRONMENTAL IMPACTS

This EIS considers environmental impacts of the Air Force's disposal of the installation and presents a variety of potential land uses to cover reasonable future uses of the property and facilities by others. Several alternative scenarios, including the community's proposed plan, were used to group reasonable land uses and to examine the environmental impacts of reuse of England AFB. This method was employed because parcelization and disposal methods represent legal processes that only indirectly affect the environment. Future use and control of use by others, however, will create indirect effects. This EIS, therefore, seeks to analyze reasonable redevelopment scenarios to determine the potential indirect effects of Air Force decisions.

Influencing factors and environmental impacts for the Proposed Action and alternatives are briefly described in the following sections. Reuse-related influencing factors are also summarized in Table S-1. Influencing factors include projections of the reuse activities that would likely influence the biophysical environment, including ground disturbance, socioeconomic factors, and infrastructure demands. The resulting employment and population trends are depicted in Figures S-1 and S-2. Impacts of the Proposed Action and alternatives over the 20-year study period are summarized in Table S-2.

Table S-1

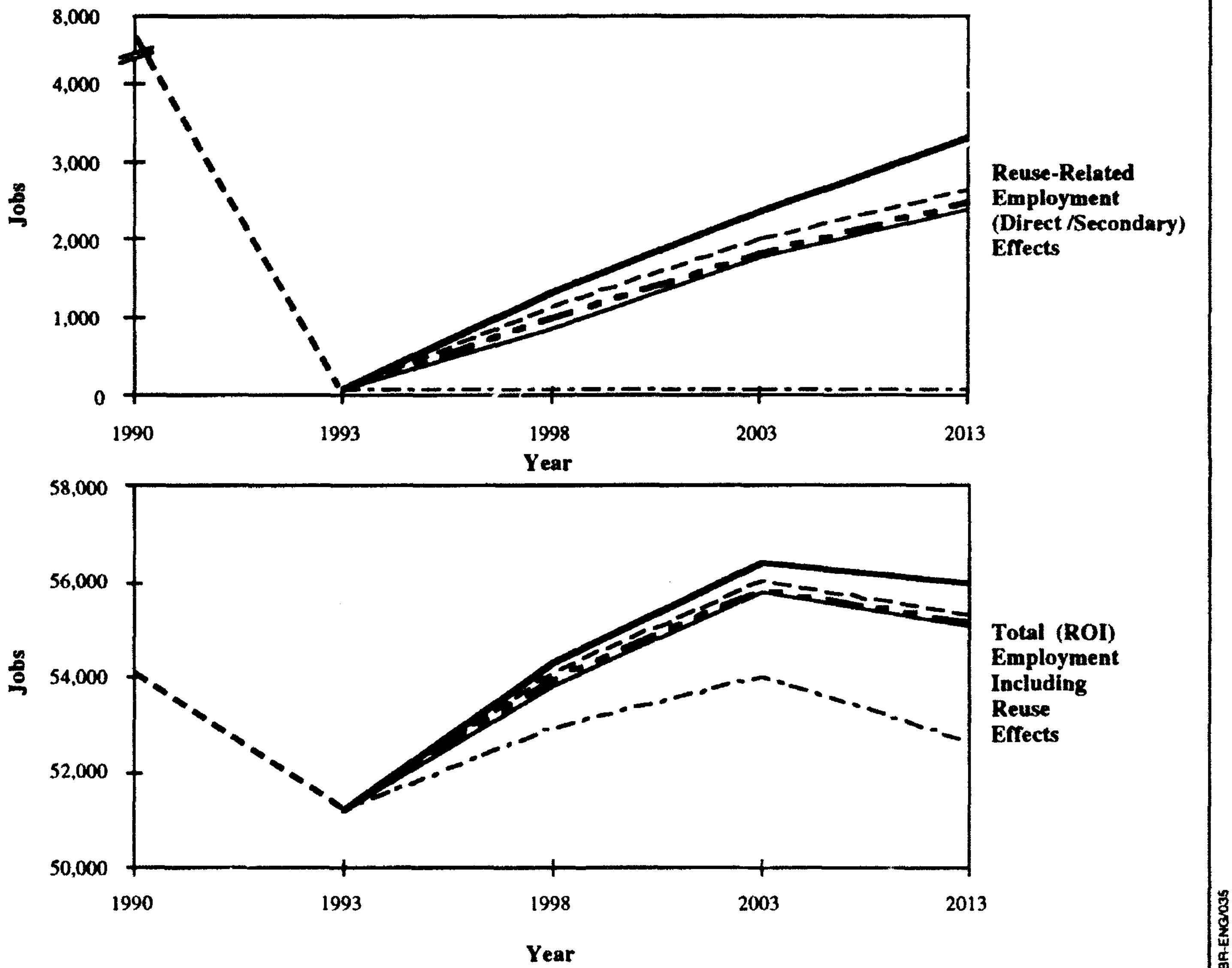
Summary of Reuse-Related Influencing Factors

Factor	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative			No-Action Alternative[1]
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013	
Ground Disturbance (acres by phase)	158	0	0	386	0	0	715	300	0	275	550	250	0
Aircraft Operations (annual)	29,120	32,080	36,030	10,690	12,190	13,950	0	0	0	0	0	0	0
Direct Employment	729	1,390	1,986	583	1,112	1,545	743	1,300	1,724	558	1,157	1,570	50
Secondary Employment	602	982	1,325	410	707	947	397	699	926	295	612	826	20
Population Increase	182	499	1,411	140	265	389	163	273	573	145	303	423	0
Traffic (average daily trips)	2,916	5,560	7,944	2,332	4,448	6,180	2,972	5,200	6,896	2,232	4,628	6,280	200
Water Demand (MGD)[2]	0.12	0.27	0.54	0.10	0.19	0.26	0.12	0.21	0.32	0.10	0.20	0.27	<0.01
Wastewater Generation (MGD)	0.09	0.19	0.38	0.07	0.13	0.18	0.08	0.14	0.22	0.07	0.14	0.19	<0.01
Solid Waste Production (tons per day)	2.2	4.6	8.1	1.8	3.4	4.7	2.2	3.9	5.6	1.7	3.6	4.9	0.13
Electricity Demand (million kWh/day)[3]	0.08	0.22	0.56	0.07	0.12	0.18	0.08	0.13	0.25	0.07	0.14	0.19	<0.01
Natural Gas Demand (MMcf/day)[4]	0.06	0.14	0.27	0.05	0.10	0.14	0.06	0.11	0.17	0.05	0.10	0.14	<0.01

Notes: [1]No-Action Alternative summarizes influencing factors relative to the closure baseline conditions.
[2]MGD = million gallons per day.
[3]kWh = kilowatt-hours.
[4]MMcf = million cubic feet.

Alternative	1993	1998	2003	2013
Proposed Action	70	1,331	2,372	3,311
General Aviation	70	993	1,819	2,492
Business/Technology Center	70	1,140	1,999	2,650
Recreation/Tourism	70	853	1,769	2,396
No Action	70	70	70	70

Reuse-Related Employment (Direct /Secondary) Effects



EXPLANATION

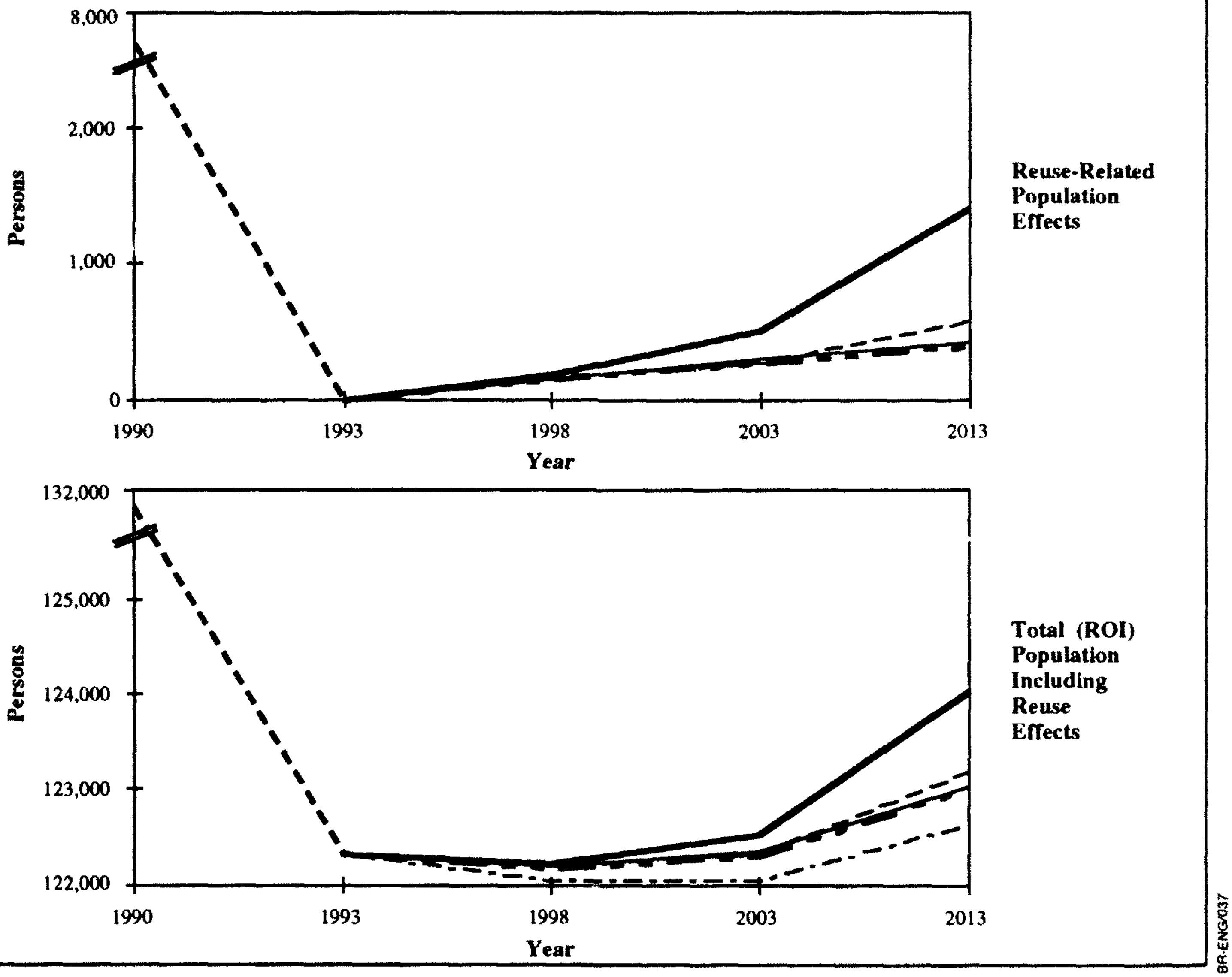
- No Action
- Proposed Action
- General Aviation
- Business/Technology Center
- Recreation/Tourism
- Preclosure

Rapides Parish Reuse-Related Employment Effects

Figure S-1

Alternative	1993	1998	2003	2013
Proposed Action	0	182	499	1,411
General Aviation	0	140	265	389
Business/Technology Center	0	163	273	573
Recreation/Tourism	0	145	303	423
No Action	0	0	0	0

Reuse-Related Population Effects



EXPLANATION

- No Action
- Proposed Action
- General Aviation
- Business/Technology Center
- Recreation/Tourism
- Preclosure

Rapides Parish Reuse-Related Population Effects

Figure S-2

Table S-2
Summary of Impacts and Mitigation Measures From Reuse Alternatives

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Local Community					
Land Use and Aesthetics	• Retention and reuse of existing facilities. • Construction of new passenger terminal complex, industrial facilities, expanded golf course, and new access road to base. • No conflicts with offbase land use. • Little change in general base appearance.	• Retention and reuse of existing facilities. • Construction of industrial facilities, expanded golf course, and new access road to base. • Portion of airfield converted to agricultural uses. • No offbase land use conflicts. • Little change in general base appearance.	• Retention and reuse of existing facilities. • Airfield converted to agricultural uses. • Construction of industrial facilities, expanded golf course, and new access road to base. • No offbase land use conflicts. • Some change in general base appearance.	• Retention and reuse of existing facilities. • Airfield converted to agricultural and recreational uses. • Construction of recreational facilities, including two golf courses and theme park/water park, and new access road to base. • No offbase land use conflicts. • Some change in general base appearance.	• No change in onbase land use. • No change in base appearance.
Transportation	• Additional average daily traffic (ADT) would not change existing roadway level of service. • No airspace conflicts.	• Similar to Proposed Action. ADT slightly lower.	• Similar to Proposed Action. ADT slightly lower.	• Similar to Proposed Action. ADT slightly lower.	• No effects on roadways or airspace.
Utilities	• Small increase in utility demands. • Minimal effect on local suppliers.	• Similar to Proposed Action. Demand slightly lower.	• Similar to Proposed Action. Demand slightly lower.	• Similar to Proposed Action. Demand slightly lower.	• Minimal increase in utility demands.
Hazardous Materials and Hazardous Waste Management					
Hazardous Materials Management	• Quantities used would increase over closure baseline. Specific chemical compositions and exact use rates are not known. • Each reuse tenant would have to comply with Superfund Amendments and Reauthorization Act Section 311, Title III. • Need for adequate emergency response capability. • Reusers would implement pollution prevention and minimization strategies recommended by the Environmental Protection Agency.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Small quantities of hazardous materials managed by Air Force.

Table S-2, Page 2 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Hazardous Waste Management	• Increase in types and quantities of hazardous waste generated compared to closure baseline. • Individual reuse tenants would need to comply with Occupational Safety and Health Administration regulations (29 CFR).	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Small quantities of waste generated.
Installation Restoration Program	• Disposal of some England AFB properties could be delayed or limited as a result of continuing Installation Restoration Program activities.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• No impact.
Storage Tanks	• All underground and aboveground storage tanks required in reuse activities would be subject to all applicable federal, state, and local regulations. • Underground and aboveground tanks not meeting current regulations to be removed prior to disposal.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action. • Caretaker maintenance of aboveground tanks.
Asbestos	• All renovation and demolition of existing buildings with asbestos-containing materials would be subject to all applicable federal, state, and local regulations.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Continued management of facilities containing asbestos.
Pesticides	• Pesticide use would increase from amounts used under baseline (caretaker status) as a result of the increase in recreational and commercial land uses.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Minimal use as part of caretaker activities.
Polychlorinated Biphenyls (PCBs)	• The base has no PCB transformers or PCB-contaminated transformers. A number of PCB-containing capacitors will be removed prior to base disposal.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.

Table S-2, Page 3 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Radon	• Radon screening survey results below Environmental Protection Agency-recommended mitigation level (i.e., < 4 picoCuries per liter of air).	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.
Medical/Biohazardous Waste	• With reuse of hospital, generation of medical/biohazardous wastes and disposal requirements would not appreciably change from preclosure conditions.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• None generated.
Natural Environment					
Soils and Geology	• About 160 acres of land would be disturbed. This would minimally alter the soil profiles and have little effect on local topography. • Slight erosion potential during construction.	• About 390 acres of land disturbed; impacts similar to the Proposed Action.	• About 1,015 acres of land disturbed mainly by agricultural activities; impacts similar to the Proposed Action.	• About 1,075 acres of land disturbed; impacts similar to the Proposed Action.	• No impact.
Water Resources	• 10% lower groundwater demand in 2013 than preclosure demand. • Stormwater discharge expected to contain lower levels of residual contaminants, resulting in improved surface water quality.	• 12% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• 11% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• 10% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• No impact.
Air Quality	• At regional scale, carbon monoxide (CO) would increase by 8% and volatile organic compounds (VOCs) by 5% over closure levels by 2013. • Other pollutants would increase less than 1%. • Local ambient pollutant concentrations would not exceed federal/state standards.	• CO and VOCs would increase by about 6% and 4%, respectively, by 2013. • No standards exceeded.	• CO and VOCs would increase by about 6% and 4%, respectively, by 2013. • No standards exceeded.	• CO and VOCs would increase by about 4% and 3%, respectively, by 2013. • No standards exceeded.	• No measurable increase in air pollutant emissions.

Table S-2, Page 4 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Noise	• Maximum of about 865 acres exposed to day/night average sound level (DNL) 65 dB or greater in 1998, decreasing to 625 acres in 2003. • About 10 residences in area. • Increased traffic noise along some roads, but no residences exposed to DNLs of 65 dB or greater.	• Maximum of about 430 acres exposed to DNL 65 dB or greater in 1998, decreasing to zero in 2003. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No aircraft noise. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No aircraft noise. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No impact.
Biological Resources	• Potential to disturb 70 acres (maximum) of native vegetation and from 90-160 acres of already disturbed vegetation depending on siting of proposed reuses. • Adverse impacts associated with potential conversion of habitats (immature bottomland forest, shrubland, and hay cropping areas) to frequently mowed weedy areas.	• Potential to disturb 70 acres of native vegetation and 316 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• Potential to disturb 70 acres of native vegetation and 915 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• Potential to disturb 65 acres of native vegetation and 915 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• *No impact. Potential* increase in habitat value.
Cultural and Paleontological Resources	• No National Register of Historic Places prehistoric sites or historic standing structures have been identified.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• No onbase impacts.

PROPOSED ACTION

Local Community

The Proposed Action would result in increases in employment and population in Rapides Parish. Approximately 1,985 direct jobs and an additional 1,325 secondary jobs would be generated by 2013. The population of Rapides Parish is projected to increase by only approximately 1,410, because most jobs would be filled locally. Most of these people are expected to reside in Alexandria and Pineville.

Land use on the base would not change substantially from the current pattern of mixed use. Specific changes would include expansion of the 9-hole golf course to 18 holes, construction of a passenger terminal complex, and construction of some industrial facilities. Reuse proposals would be consistent with local land use plans and policies. The Rapides Parish and City of Alexandria airfield compatibility ordinances may need to be revised to reflect a change from a military to a civilian airfield. The Proposed Action would not result in any airspace conflicts. Average daily traffic on local roads providing access to the base would increase slightly above closure baseline levels, but the level of service on key roads would not change. Utility consumption associated with the Proposed Action would represent a relatively small increase in the total demand over the closure baseline conditions, but all utility providers currently have excess capacity.

Hazardous Materials and Hazardous Waste Management

The types of hazardous materials and wastes used and generated as a result of the Proposed Action are expected to be similar to those used during preclosure conditions. The responsibility for managing hazardous materials and waste would shift from a single user to multiple, independent users. This may result in a reduction of service if there is no single onsite organization capable of responding to hazardous material and waste spills. The reusers would also implement pollution prevention and waste minimization strategies that have been recommended by the Environmental Protection Agency in its *Guides to Pollution Prevention* series of publications and *Waste Minimization Opportunity Assessment Manual.* The expansion of existing recreational facilities and commercial uses is expected to result in an increased use of pesticides. It was assumed that adequate management procedures would be imposed, as required by applicable laws and regulations, to ensure proper use and handling of these materials.

Reuse activities are not expected to affect the remediation of Installation Restoration Program (IRP) sites. However, the IRP schedule will result in delays in the disposal of some portions of the base. Existing underground storage tanks not in conformance with current regulations would be removed by the Air Force prior to base closure. All polychlorinated biphenyl (PCB) transformers and PCB-contaminated transformers (i.e., with greater than 50 parts per million [ppm] PCBs) have been removed from the base. A number of PCB-containing capacitors associated with the air conditioning systems in several buildings on the base will be removed prior to base disposal. Demolition and renovation of structures with asbestos-containing materials were assumed to be performed by new owners in compliance with applicable regulations and National Emissions Standards for Hazardous Air Pollutants. Radon screening survey results were below the Environmental Protection Agency-recommended mitigation level.

Natural Environment

Approximately 160 acres would be disturbed with the Proposed Action. Soils on the base are not particularly susceptible to erosion, but some soil erosion is expected to occur during construction. Construction activity could change surface drainage flows and may increase the amount of impervious surface. Water consumption would increase by about 0.5 million gallons per day by 2013 above the baseline closure level, but groundwater supplies would not be affected. Air pollutant emissions associated with the Proposed Action would increase above baseline closure levels, but local ambient pollutant concentrations would not exceed the national or Louisiana ambient air quality standards.

Aircraft noise associated with reuse of the airfield for commercial and some military operations would be less than prior to base closure. Approximately 865 acres would be exposed to day-night noise levels (DNL) of 65 decibels (dB) or greater in 1998. Approximately 10 existing residences would be within this area. It is estimated that about 30 people currently reside in those units. The area exposed to DNLs of 65 dB or greater would decrease to about 625 acres by 2003, when new, quieter aircraft would be used. No residences would be located in this area. This contrasts with about 6,740 acres exposed to noise levels greater than 65 dB under preclosure conditions. Surface traffic noise would increase along some roads above baseline closure levels, but no residences would be exposed to DNLs of 65 dB or greater.

The Proposed Action would disturb a maximum of 70 acres of native vegetation, including immature bottomland forest and shrub thicket.

Relocation of Alexandria Esler Regional Airport. The Proposed Action assumes relocation of Alexandria Esler Regional Airport to England AFB. The England Authority's *Preliminary Base Reuse Plan* issued in March 1992 indicates that the location of England AFB in proximity to downtown Pineville/Alexandria, to other local population and business centers and future access to the interstate highway system (I-49), and an existing 9,350-foot runway with a potential to expand to 10,500 feet provides some advantages over the Alexandria Esler Regional Airport. However, a decision on whether to close Esler Airport has not been made. The England Authority has commissioned a consulting firm to conduct a feasibility study to determine whether to shift aviation activity from Esler to England and the appropriate timing of any shift in activity. Chapter 4.0 includes a brief summary analysis of the environmental consequences of relocating aircraft operations from Esler Airport. If a decision to close Esler

Airport is made in the future, the results should improve environmental conditions in the vicinity due to the reduction in traffic, noise, aircraft operations, maintenance activities, and materials/fuel handling; and the reduction in water and energy consumption, and wastewater and refuse production.

GENERAL AVIATION ALTERNATIVE

Local Community

This alternative would generate 1,545 direct and approximately 945 secondary jobs by 2013. Most jobs would be filled locally. The population in Rapides Parish is projected to increase by approximately 390 by 2013, with most residing in Alexandria and Pineville.

Land use on the base would be similar to preclosure conditions, maintaining the airfield and the mixed-use pattern that currently characterizes the developed portion of the base. Specific land use changes would include expansion of the 9-hole golf course to 18 holes, conversion of existing office space to a vocational-technical school, conversion of some flightline facilities and dormitories to commercial uses, and use of a portion of the airfield for agricultural uses. The General Aviation Alternative would be consistent with local land use plans and policies. The Rapides Parish and City of Alexandria airfield compatibility ordinances may need to be revised to reflect a change from a military to a civilian airfield. Transportation, airspace, and utilities effects would be essentially the same as those described for the Proposed Action.

Hazardous Materials and Hazardous Waste Management

There would be minor differences between the General Aviation Alternative and the Proposed Action with respect to hazardous materials and waste management. A smaller amount of hazardous waste would likely be generated because of the reduction in aviation-related activities. However, pesticide use could increase if part of the airfield is used for agriculture. The remediation of IRP sites will delay the disposal of some portions of the base.

Natural Environment

Approximately 390 acres would be disturbed with this alternative. Impacts associated with this alternative on soils and geology, water resources, air quality, and cultural and paleontological resources would be similar to those described for the Proposed Action. With this alternative, approximately 70 acres of native vegetation could be disturbed. Aircraft noise effects would also be similar to the Proposed Action, but only about 430 acres would be exposed to DNLs of 65 dB or greater in 1998, decreasing to zero by the year 2003. No residences are located within the 430-acre impact area for aircraft noise. Surface traffic noise would increase on some local roads, but no residences would be affected.

BUSINESS/TECHNOLOGY CENTER ALTERNATIVE

Local Community

This alternative would generate about 1,725 direct and approximately 925 secondary jobs by the year 2013. Most of these jobs would occur in the Alexandria/Pineville area. The population of Rapides Parish is projected to increase by about 575 people by 2013, with most of the people expected to reside in Alexandria and Pineville.

Land use in the developed portion of the base would remain similar to existing uses. The airfield would be converted to agricultural uses, such as hay cropping, farming of typical regional crops, aquaculture (e.g., catfish and crawfish farming), and nurseries. Reuses proposed with this alternative would generally be consistent with local plans and policies; the use of the airfield for agriculture would not be consistent with the proposed land use plan for the City of Alexandria, but these reuses would be consistent with proposed offbase land uses. Transportation and utilities effects would be similar to the Proposed Action.

Hazardous Materials and Hazardous Waste Management

There would be some difference between this nonaviation alternative and the Proposed Action and General Aviation Alternative with respect to hazardous materials and waste management. Without aviation-related uses, quantities of fuel and other hazardous materials would not be required on the site. However, pesticide use could increase if the airfield is used for agriculture. The remediation of IRP sites will delay the disposal of some portions of the base.

Natural Environment

Approximately 1,015 acres would be disturbed with this alternative. Impacts associated with this alternative on soils and geology, water resources, air quality, biological resources, and cultural and paleontological resources would be similar to the Proposed Action. There would be no noise impacts from aircraft operations. Traffic noise could increase on some roads, but no residences would be affected.

RECREATION/TOURISM ALTERNATIVE

Local Community

This alternative would generate 1,570 direct and approximately 825 secondary jobs by the year 2013. Most of these jobs would occur in the Alexandria/Pineville area. The population of Rapides Parish would increase by approximately 425 by 2013; most of these people would reside in Alexandria and Pineville.

Land use in the developed portion of the base would be similar to current uses. The airfield would be converted to agricultural, recreational, and commercial uses. Reuses proposed for this alternative would generally be consistent with local plans and policies; the use of the airfield for agriculture and recreation would not be consistent with the proposed land use plan for the City of Alexandria, but the reuses would be consistent with proposed offbase land uses. Transportation and utilities impacts would be similar to those described for the Proposed Action.

Hazardous Materials and Hazardous Waste Management

There would be some difference between this nonaviation alternative and the Proposed Action with respect to hazardous materials and waste management. With no aviation-related uses, quantities of fuel and other hazardous materials would not be required on the site. However, pesticide use could increase if the airfield is used for agriculture. The remediation of IRP sites will delay the disposal of some portions of the base.

Natural Environment

Approximately 1,075 acres would be disturbed with this alternative. Impacts of this alternative on soils and geology, water resources, air quality, biological resources, and cultural and paleontological resources would be similar to the Proposed Action. There would be no noise impacts from aircraft operations. *Traffic noise would increase on some roads, but no residences would be* affected.

OTHER LAND USE CONCEPTS

In compliance with the Federal Property and Administrative Services Act of 1949, the Air Force solicited proposals from other federal agencies regarding their interest in acquiring any lands or facilities identified for disposal at England AFB. However, no proposals for direct federal use or sponsorship of local governmental programs were received by the Air Force for use of lands or facilities on England AFB. In addition, no other formal proposals were received by the Air Force from any entity for use of lands or facilities at the base.

NO-ACTION ALTERNATIVE

Local Community

The only Air Force activities associated with the No-Action Alternative would be caretaker maintenance of the base. This would generate approximately 50 direct and 20 secondary jobs. There would be no overall increase in employment or population. The presence of an essentially vacant and unused area in the middle of the community could hamper or delay redevelopment and revitalization of adjacent lands. Minimal effects on utilities or on road, air, or railroad transportation are expected.

Hazardous Materials and Hazardous Waste Management

Small quantities of various types of hazardous materials and pesticides would be used with this alternative. All materials and waste would be managed and controlled by an Air Force base disposal agency operating location in accordance with applicable regulations. Security of IRP sites would be enhanced with this alternative. Storage tanks would be removed or maintained in place according to required standards.

Natural Environment

This alternative would result in negligible impacts on air quality, noise, and biological resources. The No-Action Alternative would not affect soils and geology, water resources, or cultural and paleontological resources relative to baseline conditions.

SUMMARY OF PUBLIC COMMENTS

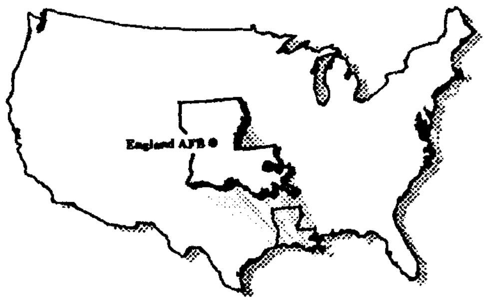
The Draft EIS (DEIS) for disposal and reuse of England AFB was made available for public review and comment in July 1992. A public hearing was held in Alexandria, Louisiana, on August 11, 1992, at which the Air Force presented the findings of the DEIS. Public comments received both verbally at the public meeting and in writing during the response period have been reviewed and are addressed by the Air Force in Chapter 9.0 of this EIS. In addition, the text of the EIS itself has been revised, as appropriate, to reflect the concerns expressed in the public comments. The responses to the comments in Chapter 9.0 indicate the relevant sections of the EIS that have been revised.

SUMMARY OF CHANGES FROM THE DEIS TO THE FEIS

Based on more recent studies or comments from the public, the following sections of the EIS have been updated or revised:

- Section 3.4.6, Cultural and Paleontological Resources, has been updated to incorporate the results of a field reconnaissance survey and archival research conducted by Tetra Tech, Inc. after publication of the DEIS.

- Section 4.4.6, Impacts on Cultural and Paleontological Resources, has been revised to include the possibility that National Register of Historic Places-eligible historic sites associated with the Oak Isle and McNutt plantations may occur at England AFB. Mitigation measures to minimize impacts have been suggested if avoidance of these areas during future construction or demolition activities is not possible.



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CHAPTER 1.0
PURPOSE AND NEED FOR ACTION

1.0 PURPOSE AND NEED FOR ACTION

This Environmental Impact Statement (EIS) examines the potential impacts to the environment that may result from the disposal and reuse of England Air Force Base (AFB), Louisiana. This document has been prepared according to the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508). Appendix A presents a glossary of terms, acronyms, and abbreviations used in this document.

1.1 PURPOSE AND NEED

Because of the changing international political scene and the resultant shift toward a reduction in defense spending, the Department of Defense (DOD) must realign and reduce its military forces pursuant to the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law [P.L.] 101-510, Title XXIX). DBCRA established new procedures for closing or realigning military installations in the United States.

DBCRA established an independent Defense Base Closure and Realignment Commission to review the Secretary of Defense's base closure and realignment recommendations. After reviewing these recommendations, the 1991 Commission forwarded its recommended list of base closures and realignments to the President, who accepted the recommendations and submitted them to Congress on July 12, 1991. Since Congress did not disapprove the recommendations within the time period provided under DBCRA, the recommendations have become law. Because England AFB was on the Commission's list, the decision to close the base is final. England AFB is scheduled to close in December 1992.

To fulfill the requirement of reducing defense expenditures, the Air Force plans to dispose of excess and surplus real property and facilities at England AFB. DBCRA requirements relating to disposal of excess and surplus property include:

- Environmental restoration of the property as soon as possible with funds made available for such restoration;
- Consideration of the local community's reuse plan prior to Air Force disposal of the property; and
- Compliance with specific federal property disposal laws and regulations.

The Air Force action, therefore, is to dispose of England AFB property and facilities. Usually, this action is performed by the Administrator of General Services. However, DBCRA required the Administrator to delegate to the

Secretary of Defense the authorities to utilize excess property, dispose of surplus property, convey airport and airport-related property, and determine the availability of excess or surplus real property for wildlife conservation purposes. The Secretary of Defense has since redelegated these authorities to the respective Service Secretaries.

1.2 DECISIONS TO BE MADE

The purpose of this EIS is to support the series of interrelated decisions concerning the disposition of England AFB. The EIS provides the decision-maker and the public the information required to understand the future environmental consequences of potential reuse options at England AFB.

After completion of this EIS, the Air Force will issue a Record of Decision (ROD) on the disposal of England AFB. The ROD will determine the following:

- What property is excess to the needs of the DOD and what property is surplus to the needs of the United States;
- The methods of disposal to be followed by the Air Force; and
- The terms and conditions of disposal.

The methods of disposal granted by the Federal Property and Administrative Services Act of 1949 and the Surplus Property Act of 1944 and implemented in the Federal Property Management Regulations are:

- Transfer to another federal agency;
- Public benefit conveyance to an eligible entity;
- Negotiated sale to a public body for a public purpose; and
- Competitive sale to private interests by sealed bid or auction.

This EIS considers the potential environmental impacts of the Air Force's disposal of England AFB using one or all of the above-mentioned procedures and portrays a variety of potential land uses to cover reasonable future uses of the property and facilities by others. Several alternative scenarios were used to group reasonable land uses and to examine the environmental effects of redevelopment of England AFB. This methodology was employed because, although the disposal will have few, if any, direct effects, future use and control of use by others will create indirect effects. This EIS, therefore, seeks to analyze reasonable redevelopment scenarios to determine the potential indirect effects of Air Force decisions.

1.3 DISPOSAL PROCESS AND REUSE PLANNING

DBCRA requires compliance with NEPA (with some exceptions) in the implementation of the base closures and realignments. Among the issues that were excluded from NEPA compliance were:

- The selection of installations for closure or realignment; and
- Analysis of closure impacts.

The Air Force's goal is to dispose of England AFB property through transfer and/or conveyance to other government agencies or private parties. The Proposed Action reflects the community's goal for base reuse, which is to convert the base to an industrial airpark with a regional airport component.

Because the parcelization and disposal methods represent legal processes and do not directly affect the environment, this EIS focuses on the environmental impacts associated with the reuse implemented by future owners. The Air Force has based its Proposed Action on plans developed by the England Economic and Industrial Development District (or England Authority) for the purpose of conducting the required environmental analysis. The Air Force developed additional alternatives to provide the basis for a broad environmental analysis, thus ensuring that reasonably foreseeable impacts resulting from potential reuses have been identified. Subject to the terms of transfer or conveyance, the recipients of the property and the local zoning authorities will ultimately determine the reuse of the property. Four alternatives have been identified: one aviation reuse proposal, two nonaviation reuse proposals, and a No-Action Alternative that would not involve reuse.

The Secretary of the Air Force has discretion in determining how the Air Force will dispose of the property. Nevertheless, the Air Force must adhere to the laws and General Services Administration (GSA) regulations in place at the time of the passage of DBCRA. The services may issue additional regulations, if required, to implement their delegated authorities. Another provision of DBCRA requires each of the services to consult with the Governor, heads of local governments, or equivalent political organizations to consider any plan for the use of such property by the local community concerned. Accordingly, the Air Force is working with state authorities and the England Authority to meet this requirement.

In some cases, compliance with environmental laws may delay the Air Force's final disposal of the property while remedial actions are conducted on contaminated property. Until property can be transferred by deed, the Air Force may execute long-term leases with the ultimate recipients to allow reuse to begin as quickly as possible. In these cases, the Air Force intends to dispose of leased property by converting leases to deeds at the earliest possible date.

Certain activities inherent in the development or expansion of an airport constitute federal actions that fall under the statutory and regulatory authority of the Federal Aviation Administration (FAA). The FAA generally reviews these activities through the processing and approval of an Airport Layout Plan (ALP). Goals of the ALP review system are to (1) determine its effectiveness in achieving safe and efficient utilization of airspace, (2) assess factors affecting the movement of air traffic, and (3) establish conformance with FAA design criteria. The FAA approval action may also include other specific elements such as preparation of the *Airport Certification Manual* (Part 139); the *Airport Security Plan* (Part 107); the location, construction, or modification of an air traffic control tower, terminal radar approach control facility, other navigational and visual aids, and facilities; and establishment of instrument approach procedures.

Because of its possible direct involvement with the disposal of England AFB, the FAA is serving as a cooperating agency in the preparation of this EIS. If surplus property is conveyed to a local agency for airport purposes, the FAA will be the federal agency that would enforce deed covenants requiring the property to be used for airport purposes. Additionally, the FAA may later provide airport improvement program grants to the airport sponsor (local agency taking title). The FAA also has special expertise and the legal responsibility to make recommendations to the Air Force for the disposal of surplus property for airport purposes. The Surplus Property Act of 1944 (50 U.S.C. Appendix 1622(g)) authorized disposal of surplus real and related personal property for airport purposes and requires that the FAA certify that the property is necessary, suitable, and desirable for an airport.

The potential environmental impacts of airport development must be assessed prior to commitment of federal funding, in accordance with NEPA and FAA Orders 1050.1D, *Policies and Procedures for Considering Environmental Impacts*, and 5050.4A, *Airport Environmental Handbook* (U.S. Department of Transportation, Federal Aviation Administration 1985a). Environmental impacts must be assessed prior to authorization of local agency plans for the development of the entire area in which the airport is located. Transportation projects that substantially impair significant public parks, recreational areas, wildlife refuges, or any significant historic site will not be implemented unless no prudent or feasible alternative exists and until all measures to mitigate adverse effects have been addressed.

Compliance with FAA regulations requires the preparation of a proposed airport development plan. This EIS presents the assessment of potential environmental impacts of available plans. If a reuse proponent has developed only conceptual plans for the airport area, the environmental impacts of that concept plan are analyzed. The FAA may then use this document to complete their NEPA requirements. This EIS also provides environmental assessment information to support FAA decisions on funding requests for airport development projects. The new owners would be required to prepare a final airport plan and submit it to the FAA, as appropriate, for approval.

1.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

NEPA established a national policy to protect the environment and ensure that federal agencies consider the environmental effects of actions in their decision-making. The CEQ was established under NEPA to oversee and recommend national policies to improve the quality of the environment. Subsequently, CEQ published regulations that described how NEPA should be implemented. The CEQ regulations encourage federal agencies to develop and implement procedures that address the NEPA process to avoid or minimize adverse effects on the environment. Air Force Regulation (AFR) 19-2 addresses implementation of NEPA as part of the Air Force planning and decision-making process.

NEPA and AFR 19-2 provide guidance on the types of actions that require the preparation of an EIS. Once it has been determined that an EIS must be prepared, the proponent must publish a Notice of Intent (NOI) to prepare an EIS. This formal announcement signifies the beginning of the scoping period, during which the major environmental issues to be addressed in the EIS are identified. A Final EIS (FEIS) is prepared, which contains the following:

- A statement of the purpose of and need for the action;
- A description of the Proposed Action and alternatives, including the No-Action Alternative;
- A description of the environment that would be affected by the Proposed Action and alternatives; and
- A description of the potential environmental consequences of the Proposed Action and alternatives.

The FEIS is filed with the Environmental Protection Agency (EPA), and is circulated to government agencies and the interested public for at least 45 days for review and comment. During this period, a public hearing may be held so that the proponent can summarize the findings of the analysis and receive input from the affected public. At the end of the review period, all substantive comments received must be addressed. A FEIS is then produced that contains responses to comments as well as changes to the document, if necessary.

The FEIS is filed with the EPA and distributed in the sama manner as the FEIS. Once the FEIS has been available for at least 30 days, an ROD for the action may be filed.

The following section describes how the Air Force has complied with NEPA requirements for public involvement in the decision-making process.

1.4.1 Scoping Process

The scoping process identified the significant issues relevant to disposal and reuse and provided an opportunity for public involvement in the development of the EIS. The NOI (Appendix B) to prepare an EIS for disposal and reuse of England AFB was published in the *Federal Register* on October 9, 1991. Notification of public scoping was also made through local media as well as letters sent to federal, state, and local agencies and officials, and interested groups and individuals.

The scoping period for the disposal and reuse of England AFB was from October 9, 1991, to January 2, 1992. A public meeting was held on October 30, 1991, at the Convention Hall in Alexandria, Louisiana, to solicit comments and concerns from the general public on disposal and reuse of England AFB. Approximately 45 people attended the meeting. Representatives of the Air Force presented an overview of the meeting's objectives, agenda, and procedures, and described the process and purpose for the development of a disposal and reuse EIS. In addition to verbal comments, written comments were received during the scoping process. These comments, as well as information from meetings with local officials and agencies, experience with similar programs, and NEPA requirements, were used to determine the scope and direction of studies/analyses to accomplish this EIS. Copies of the DEIS were mailed to all interested parties.

1.4.2 Public Comment Process

The DEIS was made available for public review and comment in July 1992. Copies of the DEIS were mailed to local libraries and provided to those requesting copies. The distribution list is contained in Appendix C. At a public hearing held on August 11, 1992, the Air Force presented the findings of the DEIS and invited public comments. All comments were reviewed and addressed, when applicable, and have been included in their entirety in this document. Responses to comments offering new or changes to data and questions about the presentation of data are also included. Comments simply stating facts or opinions, although appreciated, did not require specific responses. Chapter 9.0, Public Comments and Responses, more thoroughly describes the comment and response process.

1.5 CHANGES FROM THE DEIS TO THE FEIS

The text of the EIS has been revised, when appropriate, to make typographical corrections and minor editorial changes or to incorporate new information generated after the DEIS publication. The comments on the DEIS have been fully addressed in Chapter 9.0 and responses to comments indicate the relevant sections of the EIS that have been revised.

Based on more recent investigations, the following sections of the EIS have been updated:

- Section 3.4.6, Cultural and Paleontological Resources, has been updated to incorporate the results of a field reconnaissance survey and archival research conducted by Tetra Tech, Inc. after publication of the DEIS.

- Section 4.4.6, Impacts on Cultural and Paleontological Resources, has been revised to include the possibility that National Register of Historic Places-eligible historic sites associated with the McNutt Plantation may occur at England AFB. Mitigation measures to minimize impacts have been suggested if avoidance of these areas during future construction or demolition activities is not possible.

1.6 ORGANIZATION OF THIS EIS

This EIS is organized into a number of chapters and appendices. Chapter 2.0 includes a description of the Proposed Action and alternatives to the Proposed Action identified for reuse of England AFB property. Chapter 2.0 also includes a review of alternatives eliminated from further consideration and identifies other, unrelated actions anticipated to occur in the region during the same time period as the reuse activities, to be considered in the analysis of cumulative impacts. Finally, Chapter 2.0 provides a comparison of the Proposed Action and alternatives with respect to effects on the local community and the natural environment.

Chapter 3.0 includes a description of the affected environment under the baseline conditions of base closure. These conditions provide a basis for analyzing the potential impacts of the Proposed Action and alternatives. The results of this analysis are presented in Chapter 4.0. Chapter 5.0 includes a list of individuals and organizations consulted during the preparation of the EIS; Chapter 6.0 provides a list of the document's preparers; Chapter 7.0 contains references; Chapter 8.0 contains an index; and Chapter 9.0 provides public comments and responses.

The following appendices are included in this document:

- Appendix A - a glossary of terms and acronyms/abbreviations used in this document;

- Appendix B - the NOI to prepare this disposal and reuse EIS;

- Appendix C - a list of individuals and organizations who were sent a copy of the FEIS;

- Appendix D - an Installation Restoration Program (IRP) bibliography;

- Appendix E - a description of the methods used to evaluate the impacts of base reuse on resources of the local community and the environment;

- Appendix F - a list of permits held by England AFB;

- Appendix G - the Air Force's policy regarding management of asbestos at closing bases;

- Appendix H - a detailed description of issues and assumptions related to noise impacts;

- Appendix I - an air emissions inventory for England AFB; and

- Appendix J - an analysis of environmental impacts of the Proposed Action and alternatives by land use category.

1.7 RELATED ENVIRONMENTAL DOCUMENTS

The environmental documents listed below have been or are being prepared separately and address environmental issues at England AFB. These documents provided supporting information for the environmental analysis.

- *Final Environmental Impact Statement, Proposed Closure of Myrtle Beach Air Force Base, South Carolina* (U.S. Air Force 1990b) (includes England AFB); and

- IRP documentation (Appendix D).

1.8 RELEVANT FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

Federal permits, licenses, and entitlements that may be required by reusers or developers are presented in Table 1.8-1.

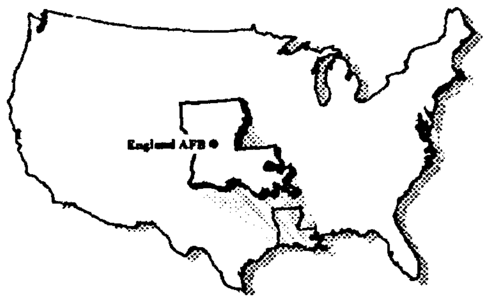
Table 1.8-1

Federal Permits, Licenses, and Entitlements Potentially Required for Reusers or Developers of Disposed Base Property

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Regulatory Agency	Authority
Title V Permit under the Clean Air Act, as amended by the 1990 Clean Air Act Amendments	Any major source (source that emits more than 100 tons per year of criteria pollutants in a nonattainment area for that pollutant or is otherwise defined in Title I of Clean Air Act as a major source); affected sources as defined in Title IV of Clean Air Act; sources subject to Section 111 regarding New Source Performance Standards; sources of air toxics regulated under Section 112 of Clean Air Act; sources required to have new source or modification permits under Parts C or D of Title I of Clean Air Act; and any other source designated by EPA regulations.	EPA; Louisiana Department of Environmental Quality	Title V of Clean Air Act; Louisiana Administrative Code, Title 33, Part III
National Pollutant Discharge Elimination System Permit	Discharge of pollutant from any point source into waters of the United States. Stormwater discharges associated with industrial activity and from large and medium municipal separate storm sewer systems.	EPA	Section 402 of Federal Pollution Act, 33 U.S.C. 1342; Section 402(p) of Clean Water Act (added by Section 405 of the Water Quality Act of 1987); 40 CFR 122.2b
Section 404 (Dredge and Fill) Permit	Any project activities resulting in the discharge of dredged or fill material into bodies of water, including wetlands, within the United States.	U.S. Army Corps of Engineers, in consultation with EPA; Louisiana Department of Wildlife and Fisheries	Section 404 of Federal Water Pollution Act, 33 U.S.C. 1344
Underground Injection Control Permit	Owners or operators of certain types of underground injection wells.	EPA; Louisiana Department of Natural Resources	Safe Drinking Water Act, 42 U.S.C. 300 h(b); 40 CFR 144; Louisiana Revised Statutes 30:1-30:24

Table 1.8-1, Page 2 of 2

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Regulatory Agency	Authority
Hazardous Waste Treatment, Storage, and Disposal (TSD) Facility Permit	Owners or operators of a new or existing hazardous waste TSD facility.	EPA; Louisiana Department of Environmental Quality	Resource Conservation and Recovery Act as amended, 42 U.S.C. 3005; 40 CFR 270; Louisiana Administrative Code, Title 33, Part V, Subpart 1
EPA Manifest Identification Number	Generators or transporters (offsite) of hazardous waste.	EPA	40 CFR 262.10 (generators); 40 CFR 263, Subpart B (transporters)
Antiquities Permit	Excavation and/or removal of archaeological resources from public lands or Indian lands and carrying out activities associated with such excavation and/or removal.	U.S. Department of the Interior, National Park Service	Archaeological Resource Protection Act of 1979, 16 U.S.C. 470cc
Endangered Species Act, *Section 10 Permit*	Taking endangered or threatened wildlife species; *engaging in certain* commercial trade of endangered or threatened species or removing such species from property subject to federal jurisdiction.	U.S. Department of the Interior, Fish and Wildlife Service	Section 10 of Endangered Species Act, 16 U.S.C. 1539; 50 CFR 17, Subparts C,D,F, & G.
Airport Operating Certificate	Operating a land airport serving any scheduled or unscheduled passenger operation of air carrier aircraft designed for more than 30 passenger seats.	U.S. Department of Transportation, Federal Aviation Administration	Federal Aviation Act of 1958, 49 U.S.C. App. 1432.



CHAPTER 2.0
ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 INTRODUCTION

This chapter describes the Proposed Action, reasonable alternatives to the Proposed Action, and the No-Action Alternative. Other alternatives that were identified but eliminated from further consideration are also briefly described. The potential environmental impacts of the Proposed Action and alternatives are summarized in Section 2.6.

The Defense Base Closure and Realignment Act (DBCRA) legislates the delegation of federal authority and consultative requirements of the Administrator of General Services to the Secretary of Defense with respect to excess and surplus real property and facilities located at a military installation closed or realigned under DBCRA. Federal Property Management Regulations (FPMR) address disposal methods associated with base closure. Disposal methods may include transfer to another federal agency, public benefit conveyance, negotiated sale to state or local government, and public sale by auction or sealed bid. Because these disposal methods are valid in the disposal of England Air Force Base (AFB), either in its entirety or in some form of parcelization, it is possible that different methods of disposal will be assigned to different parcels on England AFB.

Provisions of the DBCRA and FPMR require that the Air Force first notify other Department of Defense (DOD) departments that England AFB is scheduled for disposal. Any proposals from these departments for the reuse of England AFB would be given priority consideration.

Analysis of the Proposed Action and reasonable alternatives may also address the use of facilities by homeless assistance providers. Under the provisions of the FPMR, which implements the Stewart B. McKinney Homeless Assistance Act (Public Law [P.L.] 100-77), the Air Force must report to the U.S. Department of Housing and Urban Development (HUD) all underutilized, unutilized, and/or excess buildings and land. HUD determines the suitability of those properties for use by homeless assistance providers.

The Air Force reported England AFB to HUD as "to be excess on or about December 1992." HUD then reported the potential availability of facilities at England AFB in the *Federal Register* on January 31, 1992. After publication, homeless assistance providers have 60 days to make expressions of interest on suitable property to the Department of Health and Human Services (HHS) and to submit a lease application within 90 days. HHS is required to determine, within 25 days, the suitability of the homeless assistance provider. Homeless assistance providers determined to be suitable by HHS may be able to lease available property prior to closure of the base. The minimum term of a lease is 1 year.

If the Air Force determines a building or a parcel of land to be surplus, the HHS will provide an application to acquire the property by deed to homeless assistance providers who have expressed interest. Prior to either leasing or deeding the property, the Air Force may consider other federal uses and other important national needs. However, in deciding the disposition of surplus property, a priority of consideration will be given to uses that assist the homeless. Subsequently, the property will be made available to federal, state, and local agencies and the public.

A base reuse plan for England AFB was submitted to the Air Force in March 1992 by the England Economic and Industrial Development District (EEIDD). This reuse plan provided a conceptual layout of proposed reuses that are being considered by the EEIDD. The plan was oriented toward reuse of the base as an industrial airpark with various aviation-related potential reuses, including commercial passenger, general aviation, air cargo, aircraft maintenance, and military, supported by various industrial and commercial reuses. This land use plan has been evaluated as the Proposed Action in this Environmental Impact Statement (EIS).

Three additional alternatives (i.e., General Aviation, Business/Technology Center, and Recreation/Tourism) were developed by the Air Force to provide analysis of the widest range of potential reuse options. All three of the alternative reuse plans are oriented toward reuse of the central core of the developed area of the base as a regional conference center. The General Aviation Alternative is similar to the Proposed Action, with the primary difference being the consideration of only general aviation and air cargo reuses for the airfield.

Two nonaviation alternatives were developed to provide an analysis of plans that represent potentially marketable reuse options without an operating airfield. The Business/Technology Center Alternative focuses on reuse of the base for office, manufacturing, warehousing, and vocational-technical uses, with reuse of the airfield foı various agricultural uses. The Recreation/Tourism Alternative focuses on reuse of the base for recreation-related uses including development of extensive golf facilities, a recreational theme park, and additional recreation fields.

All four reuse plans are conceptual in nature. General assumptions were made in the analysis of potential environmental impacts. These assumptions include employment and population changes resulting from implementation of each reuse plan, use of consistent land use designations for similar reuse options, the amount of ground disturbance anticipated for each land use type, transportation and utility effects of each proposal as a function of increased population growth resulting from reuse, and anticipated phasing of the various elements of each reuse plan (as measured at the closure baseline, and at the baseline plus 5, 10, and 20 years, respectively). Details regarding the generation of these assumptions are found in Appendix E, Methods of Analysis.

Specific assumptions developed for individual reuse plans are identified in the discussions of each proposal in Sections 2.2 and 2.3.

2.2 DESCRIPTION OF PROPOSED ACTION

Section 2905(b)(2)(E) of DBCRA requires the Secretary of Defense, as part of the disposal process, to consult with the applicable governor, heads of local governments, and equivalent political organizations to consider any plan for the use of base property by the concerned local community. Air Force policy is to encourage timely community reuse planning by offering to use the community's plan for reuse or development of land and facilities as the Air Force's Proposed Action in the EIS.

The EEIDD was created by Act 142 of the 1991 Louisiana Legislature, which was signed by the Governor of Louisiana on June 30, 1991. The EEIDD was created with the purpose of accepting title to any and all real and personal property at England AFB and to obtain assistance from various sources to convert the facilities to productive civilian purposes that foster economic and industrial development in the region.

The EEIDD was created as a political subdivision of the state and consists of all territory located within Rapides Parish. The district has all of the rights, powers, privileges, and immunities accorded by law and the Constitution of Louisiana to any political subdivision in the state, including the power of taxation and the power to incur debt and issue general obligation bonds. The power of taxation includes the power to levy and collect ad valorem and sales and use taxes oı parishwide basis, subject to the approval of a majority of the qualified voters in the parish. The EEIDD also has land use, development, and regulation powers (i.e., zoning; land use planning; building codes, restrictions, and standards; and subdivision requirements) for all land formerly a part of England AFB or land that is ever owned or leased by the district. These powers would remain even with annexation of the property by a municipality.

The EEIDD is governed by a 10-member board of commissioners, including 3 members appointed by the Rapides Parish Police Jury, 3 members appointed by the mayor of the City of Alexandria, 1 member appointed by the mayor of the City of Pineville, 1 member appointed by a majority of the remaining incorporated municipalities in Rapides Parish, and 2 members nominated by the Chamber of Commerce of Central Louisiana and appointed by the Rapides Parish Police Jury and Alexandria City Council. The EEIDD has hired an executive director to manage day-to-day operations.

The EEIDD (hereinafter referred to as the England Authority) contracted with a team of consultants to prepare a reuse plan for England AFB and conduct a feasibility study for the relocation of commercial and general aviation operations from Alexandria Esler Regional Airport to the base. The reuse plan

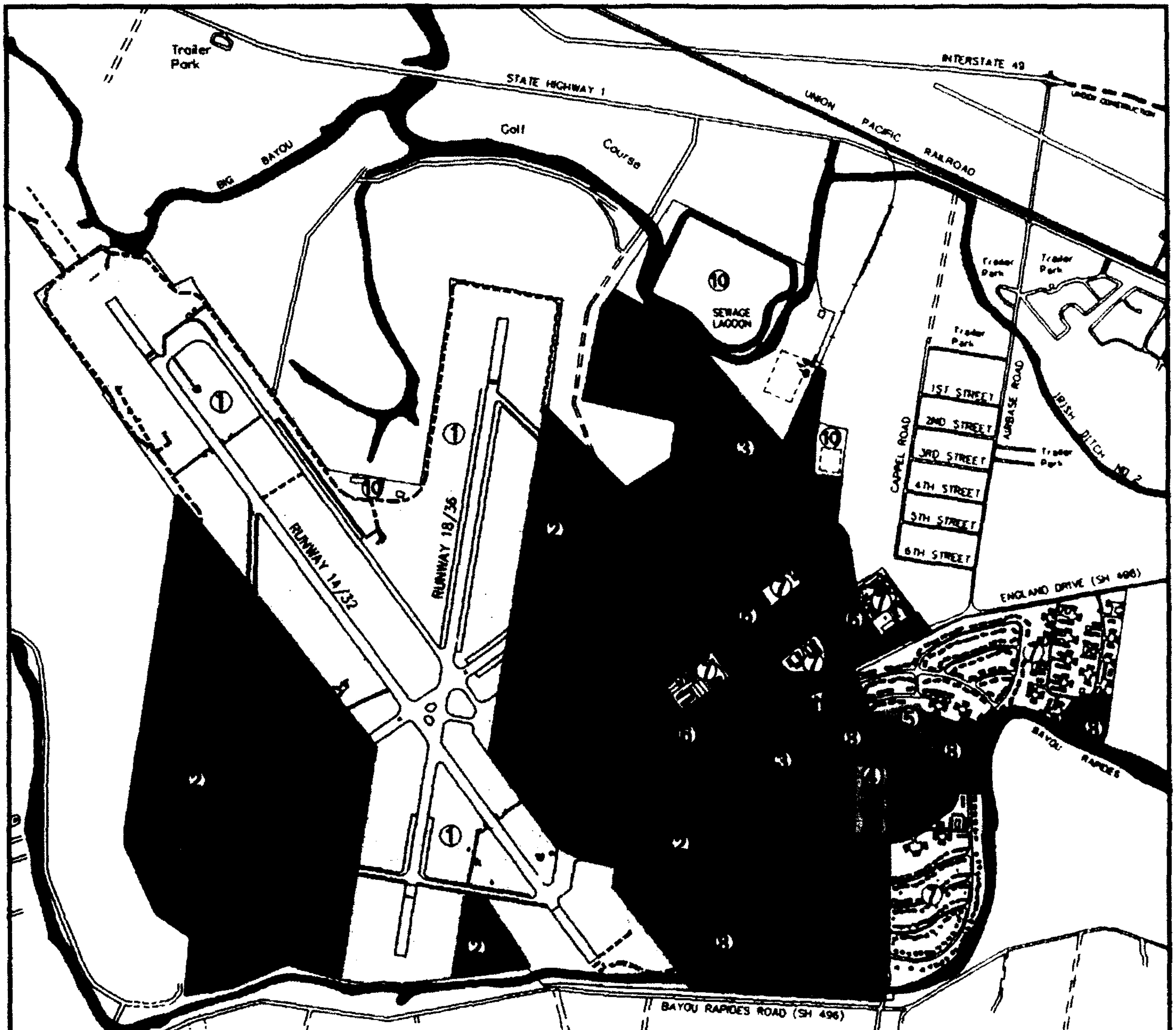
(England Economic and Industrial Development District 1992) was submitted by the England Authority to the Air Force in late March 1992.

The reuse plan identified areas of the base property to be used for various land uses, designated under nine categories: aeronautical development (935 acres), revenue-producing (800 acres), schools and health (27 acres), park and recreation (172 acres), public safety (3 acres), historic and preservation (4 acres), residential (116 acres), utilities (6 acres), and environment/sensitive (121 acres). The focus of the reuse plan was to identify areas of the base to be used for aviation purposes and associated revenue-producing areas that would support the aviation uses, with reuse of the base as a Federal Aviation Administration (FAA)-sponsored regional airport. The other land use categories were primarily based on existing land uses.

The England Authority's reuse plan included a discussion of the general concepts and criteria being used to guide the development of a more detailed reuse plan, and a description of various potential reuse proposals that are being considered for England AFB. The plan includes a discussion of seven specific reuse options: aviation development (commercial passenger, general aviation, air cargo, aircraft maintenance, and military), aircraft or automotive component specialty shops, a flight school, office facilities, warehousing/storage, a trucking center, and a truck driving school. For each of the potential reuse options, specific buildings or areas of the base that could be suitable for each reuse option were identified. For the commercial passenger aviation reuse option, specific buildings and areas of the base that could be developed for a passenger terminal complex were identified.

In addition to reuse options identified in the reuse plan, the England Authority submitted a proposal to the U.S. Army for consideration of England AFB as the location of the Intermediate Staging Base (ISB) for operations in support of training exercises at the Joint Readiness Training Center (JRTC), which will be relocated in 1993 to Fort Polk, approximately 50 miles west of England AFB. The JRTC conducts 10 rotational exercises per year involving Army light infantry Brigade Task Forces and Special Operations Forces, and Air Force Air Mobility Command and Air Combat Command forces. A separate Environmental Assessment has been prepared by the Army to support its decision (expected by October 1992) on the site for the ISB.

Based on the England Authority's reuse plan, airport layout plan (ALP), and the JRTC ISB proposal, a more specific land use-oriented plan was developed for use in analyzing environmental impacts of proposed reuse options in this EIS. This land use-oriented plan is described below as the Proposed Action (Figure 2.2-1), and is centered around the reuse of England AFB as an industrial airpark with a regional airport component. The total acreage for each land use category is summarized in Table 2.2-1. The ALP is presented in Figure 2.2-2. The Federal Aviation Administration (FAA) has accepted this draft ALP for review and coordination.



EXPLANATION

① Airfield	⑥ Commercial	Private Land (Cemetery)
② Aviation Support	⑦ Residential	Proposed Frank Andrews Blvd Extension
③ Industrial	⑧ Public/Recreation	* Not Applicable
④ Institutional (Medical)	⑨ Agriculture*	** Within Base Boundary
⑤ Institutional (Education)	⑩ Vacant Land**	

0 500 1000 2000 Feet

Industrial Airpark/ Regional Airport (Proposed Action)

Figure 2.2-1

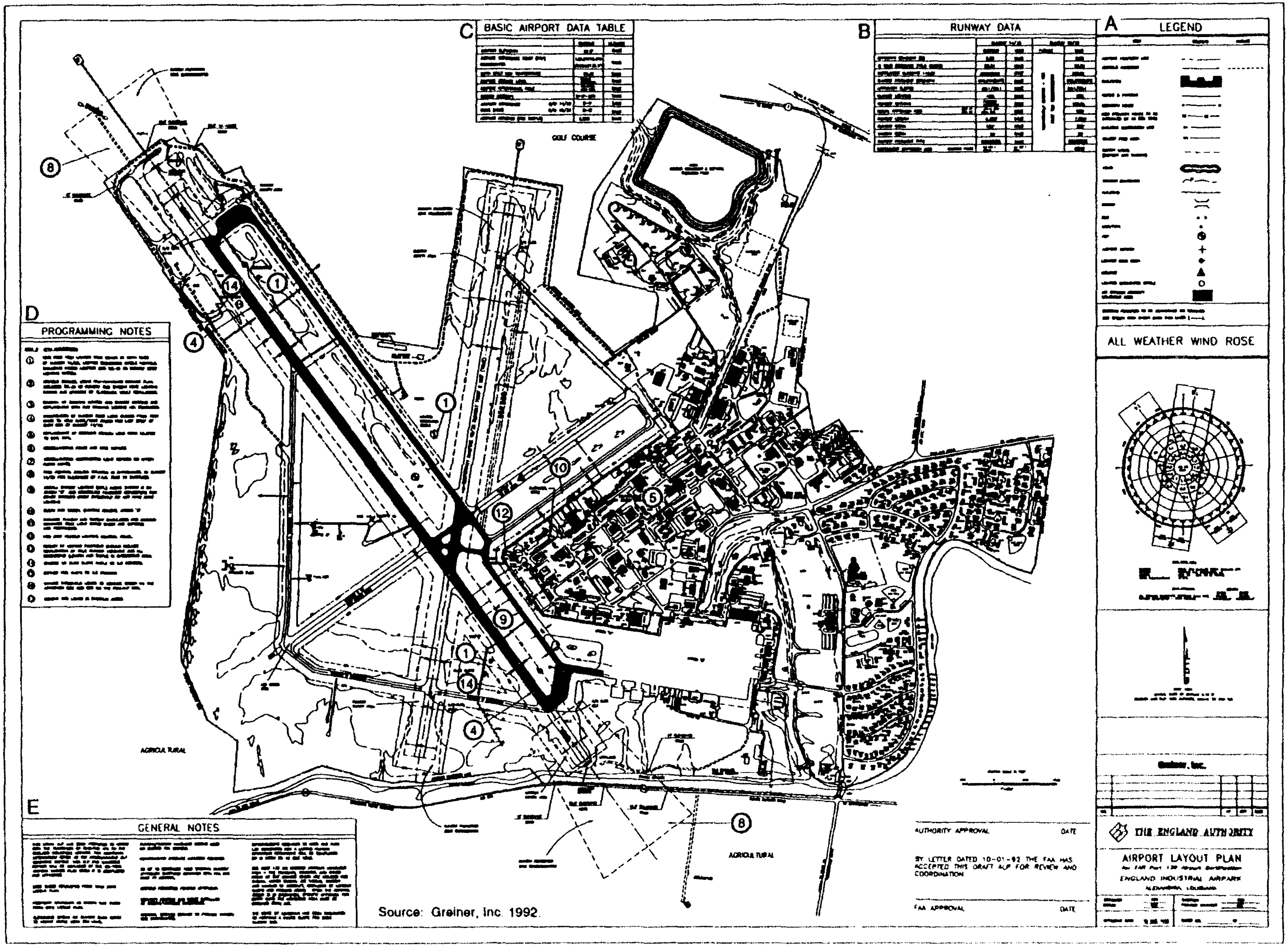


Figure 2.2-2 Airport Layout Plan. For items marked A through E see following page.

A

LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRFIELD PAVEMENT		
BUILDINGS		
ROADS & PARKING		
SECURITY FENCE		
NEW SECURITY FENCE TO BE INSTALLED BY 16 DEC 1992		
BUILDING RESTRICTION LINE		
OBJECT FREE AREA		
SAFETY AREAS (RUNWAY AND TAXIWAY)		
POND		
TERRAIN CONTOURS		
RAILROAD		
BRIDGE		
RVR		
VASI/PAPI		
ARP		
AIRPORT BEACON		
LIGHTED WIND SOCK		
HELIPAD		
LIGHTED SEGMENTED CIRCLE		
AIR CARRIER AIRCRAFT MOVEMENT AREA		

EXISTING FEATURES TO BE ABANDONED OR REMOVED ARE SHOWN WITH SHORT DASH THIN LINES (-------).

B

RUNWAY DATA

	RUNWAY 14/32		RUNWAY 18/36	
	EXISTING	1998	FUTURE	1998
EFFECTIVE GRADIENT (%)	0.05	SAME	TEMPORARILY INACTIVE - FAR PART 139 REQUIREMENTS	0.00
% WIND COVERAGE (10.5 KNOTS)	98.84	SAME		98.69
INSTRUMENT RUNWAYS 14&32	PRECISION	SAME		VISUAL
RUNWAY PAVEMENT STRENGTH	850,000(DOT)	SAME		502,000(DOT)
APPROACH SLOPES	50:1/50:1	SAME		20:1/20:1
RUNWAY LIGHTING	HIRL	SAME		HIRL
RUNWAY MARKING	PRECISION INSTRUMENT	SAME		VISUAL
VISUAL APPROACH AIDS R/W 14 / R/W 32	[illegible]	SAME		VASI
RUNWAY LENGTH	9,350'	SAME		7,000'
RUNWAY WIDTH	150'	SAME		150'
TAXIWAY WIDTH	75'	SAME		75'
RUNWAY PAVEMENT TYPE	CONCRETE	SAME		CONCRETE
INSTRUMENT APPROACH AIDS RUNWAYS 14&32	ILS CAT I TAC. [illegible]	ILS CAT I SAME		NONE

C

BASIC AIRPORT DATA TABLE

		EXISTING	ULTIMATE
AIRPORT ELEVATION		59.0'	SAME
AIRPORT REFERENCE POINT (ARP) COORDINATES		LAT 31 19 6 N LONG 92 32 9 W	SAME
MEAN DAILY MAX TEMPERATURE		90.5	SAME
AIRPORT SERVICE LEVEL		[illegible]	SAME
AIRPORT OPERATIONAL ROLE		[illegible]	SAME
DESIGN AIRCRAFT		B747-200	SAME
AIRPORT REFERENCE CODE (ARC)	R/W 14/32	D-V	SAME
	R/W 18/36	D-IV	SAME
AIRPORT ACREAGE (FEE SIMPLE)		2,282	SAME

D

PROGRAMMING NOTES

ITEM #	ITEM DESCRIPTION
1	NINE FOOT HIGH LIGHTED WIND CONES AT BOTH ENDS OF RUNWAY 14/32 LIGHTED SEGMENTED CIRCLE MIDFIELD INCLUDING POWER ADAPTER AND TIE-IN TO RUNWAY EDGE LIGHTING SYSTEM
2	AIRFIELD SIGNAGE USING FAA-APPROVED SIGNAGE PLAN INCLUDES TIE-IN TO RUNWAY AND TAXIWAY EDGE LIGHTING SYSTEM AND UPGRADE OF ELECTRICAL VAULT REGULATORS
3	REMOVAL OF EXISTING RUNWAY AND TAXIWAY MARKING AND REPLACEMENT WITH NEW MARKING MEETING FAA STANDARDS
4	MODIFICATION OF RUNWAY EDGE LIGHT GLOBES FROM 360 WHITE TO 180 WHITE/180 AMBER FOR LAST 2000 OF EACH END OF RUNWAY 14/32
5	REPLACEMENT OF ROTATING BEACON LENS FROM MILITARY TO CIVIL TYPE
6	MISCELLANEOUS FENCE AND GATE REPAIRS
7	MISCELLANEOUS OBSTRUCTION LIGHT REPAIRS ON APRON FLOOD LIGHTS
8	TREE REMOVAL AND/OR TRIMMING IN APPROACHES TO RUNWAY 14/32 FOR CLEARANCE OF F.A.R. PART 77 SURFACES
9	INSTALL TAXIWAY LIGHTING (MITL) ALONG TAXIWAY C ON APRON "B" AND CENTERLINE PAVEMENT REFLECTORS FOR OTHER TAXIWAYS WHICH CURRENTLY DO NOT HAVE EDGE LIGHTING
10	CLEAN AND RESEAL SURFACE CRACKS APRON "A"
11	REGRADE RUNWAY AND TAXIWAY SHOULDERS AND AROUND CONCRETE EDGE LIGHT BASES WHICH ARE EXPOSED AND PROTRUDING
12	NEW ATCT AIRFIELD LIGHTING CONTROL PANEL
13	SURVEY OF AIRPORT PROPERTY SHOULD INCLUDE REVALIDATION OF TRUE RUNWAY HEADINGS AND ALL DIMENSIONS (LENGTH AND WIDTH) IN OPERATIONS AREA
14	CHANGE ILS GLIDE SLOPE ANGLE TO 3.0 DEGREES
15	CHANGE VASI SLOPE TO 3.0 DEGREES
16	CHANGE THRESHOLD LIGHTS TO INDICATE GREEN ON THE APPROACH SIDE AND RED ON THE ROLLOUT SIDE
17	REMOVE RED LIGHTS IN OVERRUN AREAS

E

GENERAL NOTES

THIS INITIAL ALP HAS BEEN PREPARED TO ASSIST WITH THE TRANSITION OF ENGLAND AFB TO THE ENGLAND INDUSTRIAL AIRPARK. FOR ADDITIONAL INFORMATION REFER TO THE ACCOMPANYING ALP NARRATIVE REPORT. THIS ALP AND NARRATIVE REPORT WILL BE REPLACED BY THE 20-YEAR AIRPORT MASTER PLAN WHEN IT IS COMPLETED AND APPROVED.

BASE SHEET DEVELOPED FROM 1992 EAFB LAYOUT PLAN.

PROPERTY BOUNDARY AS SHOWN WAS TAKEN FROM EAFB LAYOUT PLAN.

ELEVATIONS SHOWN IN RUNWAY ENDS REFER TO HEIGHT ABOVE MEAN SEA LEVEL.

RUNWAY/TAXIWAY PAVEMENT WIDTHS MEET OR EXCEED FAA CRITERIA.

NONSTANDARD DISTANCE MARKERS REMOVED.

AS OF 16 DECEMBER 1992 EXISTING RUNWAY APPROACH SURFACES CONFORM WITH FAA FAR PART 77 CRITERIA.

AIRFIELD PERIMETER FENCING UPGRADED.

SECURITY FENCING AND GATES INSTALLED AT AIRSIDE/LANDSIDE INTERFACES.

NATIONAL OCEANIC SERVICE TO PROVIDE RUNWAY END COORDINATES.

IMPROVEMENTS REQUIRED TO MEET FAR PART 139 STANDARDS FOR A LIMITED AIRPORT OPERATING CERTIFICATE WILL BE COMPLETED OR IN WORK BY 16 DEC 1992

FAR PART 139 AIR CARRIER AIRCRAFT MOVEMENT AREA = THE RUNWAYS, TAXIWAYS, AND OTHER AREAS OF THE AIRPORT WHICH ARE UTILIZED FOR TAXIING, HOVER TAXIING, AIR TAXIING, TAKEOFF, AND LANDING OF AIRCRAFT, EXCLUSIVE OF LOADING RAMPS AND PARKING AREAS. WHEN THE CONTROL TOWER IS IN OPERATION, SPECIFIC APPROVAL FOR ENTRY ONTO THE MOVEMENT AREA MUST BE OBTAINED FROM ATC.

THE STATE OF LOUISIANA HAS BEEN REQUESTED TO PERFORM A PHOTO SLOPE FOR EACH RUNWAY END

BR:ENGAMO

Figure 2.2-2 Airport Layout Plan

Table 2.2-1

Land Use Acreage - Proposed Action

Land Use	Acreage
Base Property	
Airfield	882
Aviation Support	584
Industrial	181
Institutional (Medical and Educational)	28
Commercial	84
Residential	210
Public/Recreational	197
Agricultural	0
Vacant Land	116
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

The industrial airpark land use plan is based on the reuse of England AFB for the following aviation operations:

- Relocation of commercial and general aviation operations from Alexandria Esler Regional Airport to the base.
- Establishment of limited air cargo and general aviation maintenance/overhaul operations.
- Selection of England AFB to be the site of the JRTC ISB with 10 rotational training exercises conducted each year. It was assumed that the ISB would remain in operation at England AFB for the 20-year analysis time frame.

Although a study is being conducted by the England Authority to determine the feasibility (including the timing) of moving commercial and general aviation operations from Alexandria Esler Regional Airport to England AFB, for the purpose of this analysis, it was assumed that airport operations would be relocated within 5 years.

The JRTC ISB operations would consist of three major elements: airlift deployment element, ISB element, and airlift employment element. The airlift deployment element would involve the deployment of the Brigade Task Force with approximately 3,800 to 4,200 troops per rotation using Air Force C-5 and C-141 transport aircraft and contracted commercial Boeing 747 aircraft. Some of the task force troops would arrive via commercial airline flights. In addition, some equipment and personnel may be brought to the base in vehicle convoy rather than by air, particularly for rotational units which are located in proximity to the base (i.e., within several hundred miles). The C-5s would also be used to airlift helicopters and other equipment to the base. The deployment element would begin 5 to 6 days prior to ground exercises at Fort Polk. At the completion of each rotational exercise, the troops and equipment would be redeployed by an equivalent airlift.

Following the airlift deployment, the Brigade Task Force would conduct operations in preparation for movement to ground exercise areas at Fort Polk (i.e., ISB element). The ISB would consist of an approximate 10-acre tent camp to house the Brigade Task Force and a 10- to 35-acre area for conducting small-scale tactical rehearsals involving simulation pyrotechnics and blank ammunition for small firearms.

The airlift employment element would involve the airlift of the Brigade Task Force using Air Force C-130 transport aircraft and helicopters to the ground exercise areas at Fort Polk at the start of the exercise and the conduct of aerial resupply, simulated casualty evacuation, and other theater airlift missions to support the task force over the course of the exercise. In addition, some troops may be convoyed to and from the Fort Polk exercise areas. The ground exercises would occur over a 10-day period.

In addition to defining the potential aviation reuses assumed for the Proposed Action, areas identified in the England Authority's reuse plan for revenue production and those areas identified for aeronautical development which currently comprise the flightline area (e.g., hangars and other support buildings) were designated as aviation support, industrial, commercial, and residential (i.e., three dormitory complexes) for the Proposed Action (Figure 2.2-1). Areas identified in the reuse plan for education, medical, recreation, and residential (military family housing area) are designated as such for the Proposed Action. Areas identified in the reuse plan as environment/sensitive are designated as vacant land for the Proposed Action.

Because specific data were not available from the England Authority for the Proposed Action, for the purpose of this analysis, assumptions were made for the following:

- Layout and acreage totals for the proposed land uses;
- Extent of construction/demolition activities required;
- Acreage of ground disturbance resulting from construction/ demolition activities;
- Projected flight operations and fleet mixes through 2013;
- Fleet mix involving 25 percent Stage 2 aircraft (e.g., B-727-200) and 75 percent Stage 3 aircraft (e.g., MD-82) in

1998 with complete conversion to the quieter Stage 3 by 2003 as required by FAA regulations (U.S. Department of Transportation, Federal Aviation Administration 1988);

- Employment and population projections through 2013 for the Alexandria/Pineville area and Rapides Parish;
- Traffic generation and daily trip projections through 2013;
- Proposed transportation improvements;
- Utility requirement projections through 2013; and
- Phasing plans for reuse of England AFB through 2013.

The amount of development for each land use category assumed to occur with the Proposed Action, including existing facility demolition and retention and new facility construction, is summarized in Table 2.2-2. The acreage for each type of land use category assumed to be disturbed by construction/demolition activities is presented in Table 2.2-3 for the three phases of development analyzed in this EIS. Proposed reuses iden..:ied for the Proposed Action are discussed in the following sections.

Table 2.2-2

Facility Development - Proposed Action

	Floor Space (in thousands of square feet)		
Land Use	Existing Facility Demolition	Existing Facility Retention*	New Facility Construction
Airfield	0	15	0
Aviation Support	23	533	50
Industrial	10	390	0
Institutional (Medical and Educational)	0	185	0
Commercial	8	286	0
Residential	0	1,019	0
Public/Recreational	17	42	0

Note: *Includes only facilities over 1,000 square feet in area.

Table 2.2-3

Acres Disturbed by the Proposed Action, By Phase

Land Use	1993-1998	1998-2003	2003-2013	Total
Aviation Support	75	0	0	75
Industrial	15	0	0	15
Public/Recreational	68	0	0	68
TOTAL:	158	0	0	158

2.2.1 Airfield

The airfield land use category includes approximately 880 acres and consists of the runways, taxiways, runway protection zones, and control tower (Figure 2.2-1). The airfield would be used primarily for commercial passenger and general aviation aircraft. Air cargo would comprise a small percentage of the overall airfield use. Military air operations associated with the JRTC ISB, involving both fixed-wing and helicopter aircraft, would occur 10 times per year and would be concentrated over a 15-day period during each rotational exercise.

A conceptual plan for the civilian use of the aviation facilities at England AFB will be developed by the England Authority and provided in an Airport Layout Plan. The airfield areas designated in the reuse plan submitted by the England Authority are based on criteria contained in *Airport Design*, Advisory Circular YI150-5300-13-40 (U.S. Department of Transportation, Federal Aviation Administration 1989). These criteria would be used in developing the layout elements (e.g., dimensions, separations, and clearances) of the airfield to allow current operation of all commercial aircraft. The airfield, as designed, is capable of handling widebody aircraft, such as the Lockheed C-5 and Boeing 747.

No specific improvements to the airfield have been identified at this time. Airfield improvements required to bring the airfield up to FAA requirements for commercial aviation airports will be analyzed as part of the feasibility study for the relocation of Alexandria Esler Regional Airport. Required airfield improvements would be developed according to FAA Advisory Circulars, standards, and recommendations.

Projected airfield operations are presented in Table 2.2-4. Assumptions of air operations for air passenger (commuter) and general aviation were based on data provided by the England Authority and current and projected levels of operations at Alexandria Esler Regional Airport. Approximately 95 percent of the air passenger and general aviation operations were assumed to occur during daytime hours (7 a.m. to 10 p.m.). For analysis purposes, two-thirds of the air cargo operations were assumed to occur during nighttime hours (10:00 p.m. to 7:00 a.m.).

Table 2.2-4

Projected Flight Operations - Proposed Action

Year	Operations	Function	%	Fleet Mix	Annual Operations
1998	Air Passenger (Military Contract)	Air Carrier	100	B747-200	240
		Commuter	100	J31/SF40/EM120	11,680
	Air Cargo		25	B727-200	548
			75	MD-82	1,642
	General Aviation		70	Single-Engine Piston	5,950
			22	Multi-Engine Piston	1,870
			6	Turboprop	510
			2	Turbojet	170
	Military (Fixed-Wing)		7	C-5A	250
			1	C-141B	20
			92	C-130	3,200
	Military (Helicopter)		100	UH-1/UH-60/AH-1/AH-64/ OH-58/CH-47/CH-53	3,040
				TOTAL:	**29,120**
2003	Air Passenger (Military Contract)	Air Carrier	100	B747-200	240
		Commuter	100	J31/SF40/EM120	13,140
	Air Cargo		0	B727-200	0
			100	MD-82	2,190
	General Aviation		66	Single-Engine Piston	6,600
			23	Multi-Engine Piston	2,300
			8	Turboprop	800
			3	Turbojet	300
	Military (Fixed-Wing)		7	C-5A	250
			1	C-141B	20
			92	C-130	3,200
	Military (Helicopter)		100	UH-1/UH-60/AH-1/AH-64/ OH-58/CH-47/CH-53	3,040
				TOTAL:	**32,080**
2013	Air Passenger (Military Contract)	Air Carrier	100	B747-200	240
		Commuter	100	J31/SF40/EM120	15,330
	Air Cargo		0	B727-200	0
			100	MD-82	2,190
	General Aviation		63	Single-Engine Piston	7,560
			24	Multi-Engine Piston	2,880
			8	Turboprop	960
			3	Turbojet	360
	Military (Fixed-Wing)		7	C-5A	250
			1	C-141B	20
			92	C-130	3,200
	Military (Helicopter)		100	UH-1/UH-60/AH-1/AH-64/ OH-58/CH-47/CH-53	3,040
				TOTAL:	**36,030**

Military air operations associated with the JRTC ISB were based on estimated requirements for three different types of rotational exercises occurring seven (approximately 64 helicopters), two (118 helicopters), and one (148 helicopters) time each year, respectively. These estimates represent the maximum number of helicopters that would be used for each type of rotation. The air operations for the C-5, C-141, C-130, and Boeing 747 aircraft would occur with each of the rotations. Approximately one-third of the C-130 and helicopter air operations were assumed to occur during nighttime hours.

2.2.2 Aviation Support

The proposed aviation support area includes five areas surrounding the airfield, including an approximately 195-acre area along and near the existing flightline; three areas totaling about 390 acres currently part of the existing England AFB airfield and presently undeveloped except for various navigation aid facilities; and an approximately 1-acre area near the southern boundary of the base southeast of the airfield that includes a radar facility to be retained by the FAA (Figure 2.2-1). Land uses in these areas for the Proposed Action would be used in support of the various aviation options being considered by the England Authority. The 195-acre area along and near the existing flightline includes the parking aprons (covering 85 acres), hangar facilities, the existing base terminal, the hydrant refueling system, and miscellaneous shops and other facilities.

The England Authority's reuse plan identified six areas that are being considered for the location of a passenger terminal complex. Three of the sites would involve the reuse of existing buildings along or near the flightline area, including Building 525, the large hangar on the north apron; Building 806, the existing base exchange building one block south of the north apron; and Building 2102, an existing jet engine shop on the south apron. Reuse of any of these buildings for a passenger terminal would require the demolition of some nearby small buildings to provide adequate access and parking. Reuse of Building 806 for a passenger terminal would require expanding the north apron to the south to provide access to the terminal.

Three other areas were identified that could be used for a new terminal facility. Two of the sites, one west and the other northeast of the runway intersection and north of the closed southwest-northeast trending runway, are undeveloped portions of the existing airfield. The third site, Building 107, is the existing base operations and control tower, and is east of the runway intersection in the northwest corner of the developed area of the base. Use of this site for a terminal complex would require the demolition of approximately 15 buildings and some communications/navigation aid facilities to provide space for the terminal, access, and parking. Construction of a passenger terminal complex was assumed to require approximately 20 acres for the terminal and parking areas.

The layout of the proposed airfield reuse components (i.e., commercial, general, and military aviation) on the north, west, and south apron areas and the location of the passenger terminal would determine the location of other aviation support land uses. Because of the size of the C-5 aircraft required for the JRTC airlift operations, the south parking apron would be the one most likely to be used for operations involving this aircraft and the Boeing 747s. This area would also be most suitable for air cargo operations involving jet aircraft such as the Boeing 727. The north and west parking aprons would most likely be used for commercial and general aviation aircraft parking. Helicopters associated with the JRTC ISB could be parked in available space along any of the parking aprons or on the taxiway/grassy areas designated aviation support on Figure 2.2-1, west and northeast of the intersection of the two runways.

Aviation support reuses could include a commercial flight school, aircraft maintenance and overhaul (principally for general aviation), aircraft component specialty shops (e.g., maintenance, overhaul, and calibration of avionics, hydraulic and pneumatic devices, propellers, and engines), and air cargo operations. The existing firehouse would be reused to support airfield operations. It was also assumed that the hydrant refueling system would be reused in support of the JRTC ISB air operations. The aviation support areas west and northeast of the runway intersection could be used to support JRTC ISB functions, such as the tent encampment and rehearsal area, as well as for helicopter parking as previously described.

2.2.3 Industrial

Two areas on England AFB covering approximately 180 acres are designated for reuse as industrial: a 150-acre area in the northeast corner of the base currently used for warehousing, civil engineering, motor pool, and munitions storage functions, and a 30-acre area south and west of the existing nine-hole golf course consisting of various small repair shops and storage buildings. These areas would be reused for similar functions such as warehousing, manufacturing, and various other industrial uses such as automobile component specialty shops and light industrial uses.

The current base transportation compound (motor pool) and civil engineering complex and administrative building, and the undeveloped area northwest of these facilities, is proposed for reuse as a truck driving training facility. Existing facilities in the motor pool area would be reused and training facilities (e.g., truck driving course and loading docks) would be constructed on approximately 15 acres in the undeveloped area. The existing petroleum, oil, and lubricants area in the eastern portion of the 150-acre area would be reused to support the hydrant fueling system immediately south of the south apron, if the demand for fuel with various aviation reuse components warranted its use.

2.2.4 Institutional (Medical and Educational)

The base hospital, encompassing approximately 10 acres, would be reused as some type of medical facility providing either public- or private-sector medical services, or research or specialty medical services.

The base elementary school and two adjacent buildings on approximately 20 acres would be reused for elementary and secondary education purposes in conjunction with the Rapides Parish School Board. Reuse would be as a model school developed under one of several programs, including the New American Schools Development Corporation model school program, the President's proposed *America 2000* program, or a school board-developed model school program. It was assumed that the existing base child care center and adjacent youth center would be reused for similar functions or in support of the model school program.

2.2.5 Commercial

Approximately 85 acres in the central portion of the base are proposed for commercial reuses, including administrative-type offices and some retail establishments, to provide services compatible with airport activities. Those areas include the office buildings located north of the south apron and west of the golf course, which would be reused for an office complex; the existing base community center, which would be reused for retail establishments or small administrative offices; and several small buildings west of the base trailer park, which could be reused for office space. The existing dining clubs and retail sales buildings could be renovated for office space or could support other reuse activities in their current function.

2.2.6 Residential

Residential land uses associated with the Proposed Action include the existing military family housing area (598 units), the three dormitory/visitors' quarters complexes, and the base trailer park, encompassing 210 acres. Proposed reuses for the military family housing area, currently consisting of single- and multi-family houses, include housing for a retirement community, housing in support of other reuses (e.g., a truck driving school), or as leased (rental) or time-share housing. It was assumed that the existing base trailer park would be reused as a trailer park or as a recreational vehicle park.

The dormitory-style housing would be reused to support various aviation (e.g., a flight school), commercial (e.g., a conference center), or industrial (e.g., a truck driving school) reuses. Some dormitory facilities could also be reused to support JRTC ISB functions.

2.2.7 Public/Recreational

Approximately 200 acres are proposed for public/recreational uses. Most of the existing recreational facilities throughout the base would be reused for community use or in support of other reuses such as a retirement community or a conference center. It was assumed that approximately 70 acres currently occupied by the small arms range, horse stables, several other structures (excluding the FAA radar facility), and the base construction debris landfill in the area south and southeast of the south apron would be used for expansion of the existing 9-hole golf course to 18 holes. The existing buildings would be demolished. Flying Tiger Heritage Park, north of the golf course clubhouse, would be retained in its present form (i.e., permanent displays of five military aircraft). The golf course expansion would be constructed within the first 5 years.

2.2.8 Agricultural

No agricultural uses are proposed for the Proposed Action. However, the Air Force currently leases approximately 800 acres of the existing airfield area to a local farmer for hay cropping. Areas between the runways and taxiways and adjacent to the aircraft parking aprons could be used, as they are currently, for limited hay production through leases with local farmers.

2.2.9 Vacant Land

Three areas of the base, totaling approximately 115 acres, were identified as environment/sensitive in the England Authority's reuse plan and are designated as vacant land for the Proposed Action because no reuses were proposed. These areas contain 8 of the 44 hazardous and/or radioactive waste sites being investigated under the Air Force Installation Restoration Program (IRP), including the sewage lagoon formerly used by the base, two low-level radioactive waste sites, and several landfill sites.

2.2.10 Employment and Population

The Proposed Action is expected to generate a peak of approximately 100 direct, short-term construction-related jobs (1996) and about 2,000 direct long-term jobs by 2013. An additional 1,300 secondary jobs are expected to be generated in Rapides Parish as a result of base reuse. It is expected that many of the reuse jobs would be filled by people who are unemployed as a result of the closure of England AFB. Estimated employment at closure and at 5, 10, and 20 years with reuse is presented in Table 2.2-5. Employment related to base reuse is expected to result in the inmigration of approximately 1,400 persons into Rapides Parish by 2013.

Table 2.2-5

Reuse-Related Employment and Population Effects - Proposed Action

	Closure	1998	2003	2013
Employment				
Direct	50	729	1,390	1,986
Secondary	20	602	982	1,325
Population Increase	0	182	499	1,411

2.2.11 Transportation

Traffic circulation was not specifically addressed in the England Authority's reuse plan for England AFB. However, a map in the document showing the reuse plan for the base depicted a proposed circulation route that focused on Frank Andrews Boulevard, the primary east-west street in the central area of the base; Chappie James Boulevard, the primary north-south street; and Oliver Drive, the access road leading to the Main Gate.

The reuse plan map also showed the extension of Frank Andrews Boulevard beyond the base boundary to Airbase Road via 6th Street. Such an extension could potentially require the relocation or removal of 8 to 12 homes and other structures on the north side of 6th Street, depending on the exact alignment of the road.

The extension of Frank Andrews Boulevard, including a possible realignment of the intersection of Andrews Boulevard/6th Street and Airbase Road, would provide more direct access from State Highway 1 and Interstate 49 (when it is completed) to the areas of the base proposed for industrial, commercial, and aviation support reuses, including the truck driver training school and a new passenger terminal complex. Currently, traffic associated with such reuses would be required to pass through the residential, medical, educational, and recreational areas of the base.

Because of the existing characteristics of the onbase road network (e.g., narrow streets and small turning radius intersections), additional onbase road improvements may be required to support a large trucking operation or other industrial reuses in the northeastern corner of the base, including development of a more direct access route to and from this area to connect with Frank Andrews Boulevard.

Based on land use and employment projections, average daily vehicular traffic to and from base property would be approximately 7,950 trips by 2013. Most of the vehicular traffic would occur during daytime hours. The proposed reuse of a portion of the base for a truck driver training school could generate an above-normal amount of truck traffic on some access roads to the base (primarily Airbase Road and the Frank Andrews Boulevard/6th Street extension), if some of the driver training occurred on surface streets and nearby highways. Because specific training procedures are not known at this time, it was assumed for the purpose of this analysis that approximately 200 truck movements (i.e., a trip in or out) would occur, primarily during daytime hours.

The relocation of commercial and general aviation operations from Alexandria Esler Regional Airport would also generate additional traffic on roads near the base, particularly during peak arrival and departure times. It was estimated that approximately 600 trips per day would be generated.

JRTC ISB activities at England AFB would also generate additional local traffic during the time periods when the rotational exercises are occurring at the base. As described previously, some equipment and personnel may be brought to the base by vehicle convoy rather than be airlifted in, and some troops may be convoyed to and from the Fort Polk exercise areas. It is assumed that these convoys would generate less than 300 trips per day on the few days each month when this activity would occur.

2.2.12 Utilities

By 2013, the projected reuses of England AFB and associated population increases in the region surrounding the base would generate the following increases in utility demands over projected closure conditions:

- Water - 0.54 million gallons per day (MGD), or an increase of approximately 2.5 percent;
- Wastewater - 0.38 MGD, or an increase of approximately 3.9 percent;
- Solid waste - 8.1 tons per day, or an increase of 5.3 percent;
- Electricity - 0.56 million kilowatt-hours (kWh) per day, or an increase of 3.0 percent; and
- Natural gas - 0.27 million cubic feet (MMcf) per day, or an increase of about 3.7 percent.

Proposed reuses associated with the Proposed Action would generate the following onsite utility demands by 2013:

- Water - 0.23 MGD;
- Wastewater - 0.15 MGD;
- Solid waste - 5.0 tons per day;

- Electricity - 0.05 million kWh per day; and
- Natural gas - 0.13 MMcf per day.

No utility system improvements have been identified for the Proposed Action.

2.3 DESCRIPTION OF ALTERNATIVES

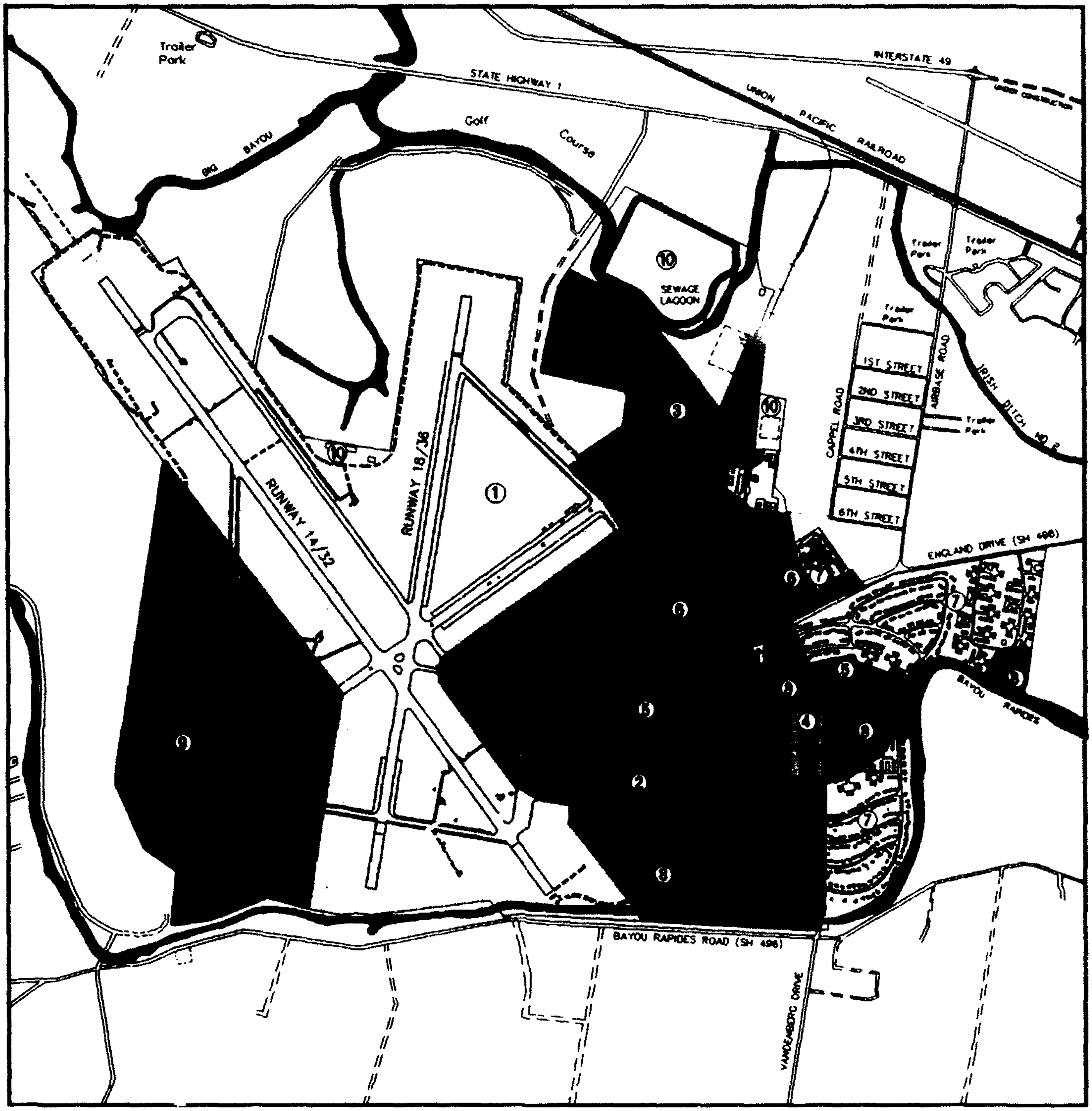
Three comprehensive reuse alternatives and the No-Action Alternative have been identified for analysis and are described in this section. One alternative involves aviation-related reuse of England AFB, while the other two consist of entirely nonaviation reuses. All three alternatives maintain the same land use designations for several areas of the base that were identified for the Proposed Action, including expansion of the existing 9-hole golf course to a regulation 18-hole course; reuse of most of the existing recreation facilities, including Flying Tiger Heritage Park; reuse of the base hospital; and reuse of the northeast corner of the base for industrial purposes. The existing 598 units of military family housing would be retained, but various types of potential reuses are proposed. The three areas designated as vacant land for the Proposed Action are also designated as such for all three alternatives.

2.3.1 General Aviation Alternative

Like the Proposed Action, the General Aviation Alternative would convert the base airfield and supporting facilities to civilian aviation-related reuses. The primary difference between the Proposed Action and this alternative is that only general aviation and air cargo operations are proposed. Commercial air operations would remain at Alexandria Esler Regional Airport. With a reduced aviation emphasis, the amount of land designated for aviation support is reduced by 410 acres and the airfield area would increase by approximately 40 acres. Approximately 300 acres in the western portion of the existing airfield would be used for agriculture. Other nonaviation land uses would include industrial, commercial, institutional (medical and educational), residential, and recreational. Land use areas are shown in Figure 2.3-1, and acreages by land use category are listed in Table 2.3-1.

To further define the General Aviation Alternative for the purpose of this analysis, assumptions were made for the following:

- Layout and acreage totals for proposed land use categories;
- Extent of construction/demolition activities required;
- Acreage of ground disturbance resulting from construction/ demolition activities;
- Projected flight operations and fleet mixes through 2013;



EXPLANATION

1 Airfield
2 Aviation Support
3 Industrial
4 Institutional (Medical)
5 Institutional (Education)
6 Commercial
7 Residential
8 Public/Recreation
9 Agriculture
10 Vacant Land*

Private Land (Cemetery)

Proposed Frank Andrews Blvd Extension

* Within Base Boundary

0 500 1000 2000 Feet

General Aviation Alternative

Figure 2.3-1

Table 2.3-1

Land Use Acreage - General Aviation Alternative

Land Use	Acreage
Base Property	
Airfield	918
Aviation Support	174
Industrial	168
Institutional (Medical and Educational)	44
Commercial	141
Residential	192
Public/Recreational	213
Agricultural	303
Vacant Land	129
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

- Fleet mix representation of a minimum of 75 percent of applicable Stage 3 aircraft in 1998 and all Stage 3 in 2003;
- Employment and population projections through 2013 for the Alexandria/Pineville area and Rapides Parish;
- Traffic generation and daily trip projections through 2013;
- Proposed transportation improvements;
- Utility requirement projections through 2013; and
- Phasing plans for reuse of England AFB through 2013.

The amount of development for each land use category assumed to occur for this alternative, including existing facility demolition and retention, as well as new facility construction, is summarized in Table 2.3-2. Acreages assumed to be disturbed during each phase of development are summarized in Table 2.3-3. Proposed reuses associated with each land use category shown in Figure 2.3-1 are described in the following sections.

Table 2.3-2

Facility Development - General Aviation Alternative

Land Use	Floor Space (in thousands of square feet) Existing Facility Demolition	Existing Facility Retention*	New Facility Construction
Airfield	0	15	0
Aviation Support	4	401	0
Industrial	10	196	20
Institutional (Medical and Educational)	8	274	0
Commercial	19	560	0
Residential	0	815	0
Public/Recreational	7	31	0

Note: *Includes only facilities over 1,000 square feet in area.

Table 2.3-3

Acres Disturbed by the General Aviation Alternative, By Phase

Land Use	1993-1998	1998-2003	2003-2013	Total
Airfield	0	0	0	0
Aviation Support	0	0	0	0
Industrial	15	0	0	15
Commercial	0	0	0	0
Public/Recreational	68	0	0	68
Agricultural	303	0	0	303
TOTAL:	**386**	**0**	**0**	**386**

2.3.1.1 Airfield

Reuse of the airfield would be similar to the Proposed Action except that the three aviation support areas for the Proposed Action located adjacent to the taxiways are included as part of the airfield or used for agriculture. For this alternative, the airfield would consist of approximately 920 acres, and would be used primarily for general aviation and air cargo operations, with the potential for some aircraft maintenance/overhaul-related traffic. An Airport Layout Plan has not been developed for this alternative.

Projected airfield operations are presented in Table 2.3-4. Assumptions on air operations for general aviation were based on current and projected levels of operations at Alexandria Esler Regional Airport. The projected air operations for this category assume a small increase in the number of annual air operations. Approximately 95 percent of general aviation operations were assumed to occur during daytime hours (7 a.m. to 10 p.m.). For analysis purposes, two-thirds of the air cargo operations were assumed to occur during nighttime hours (10:00 p.m. to 7:00 a.m.).

Table 2.3-4

Projected Flight Operations - General Aviation Alternative

Year	Operations	%	Fleet Mix	Annual Operations
1998	Air Cargo	25	B727-200	548
		75	MD-82	1,642
	General Aviation	70	Single-Engine Piston	5,950
		22	Multi-Engine Piston	1,870
		6	Turboprop	510
		2	Turbojet	170
			TOTAL:	**10,690**
2003	Air Cargo	0	B727-200	0
		100	MD-82	2,190
	General Aviation	66	Single-Engine Piston	6,600
		23	Multi-Engine Piston	2,300
		8	Turboprop	800
		3	Turbojet	300
			TOTAL:	**12,190**
2013	Air Cargo	0	B727-200	0
		100	MD-82	2,190
	General Aviation	63	Single-Engine Piston	7,560
		24	Multi-Engine Piston	2,880
		8	Turboprop	960
		3	Turbojet	360
			TOTAL:	**13,950**

2.3.1.2 Aviation Support

The aviation support area, consisting of approximately 175 acres, includes the west and south parking aprons and most of the area on and near the flightline. For this alternative, the area immediately north of the large hangar on the south apron and south of the golf course is proposed for aviation support. The existing fire station and the FAA radar facility located south of the golf course are also included in the aviation support area.

The west apron parking area and adjacent flightline facilities are proposed for general aviation functions supporting small, private, and corporate aircraft. The south apron parking area and adjacent hangars and other facilities are proposed for air cargo with the potential for some aircraft maintenance/overhaul operations, primarily for general aviation aircraft. The south apron provides sufficient space for maneuvering and parking aircraft and the adjacent large hangars would provide space for storage and redistribution of air cargo and for maintenance/overhaul of general aviation aircraft.

2.3.1.3 Industrial

For this alternative, the area of the base proposed for industrial land uses (approximately 170 acres) is smaller than for the Proposed Action, but the core industrial area in the northeast portion of the base would be the same. The existing warehouses and munitions storage facilities could be used for warehousing, and the existing base transportation and civil engineering complex could be reused for other industrial uses, including a trucking center or automotive components shops. Approximately 15 acres of this area were assumed to be developed for a trucking center.

2.3.1.4 Institutional (Medical and Educational)

For the General Aviation Alternative, the base hospital would be reused to provide either public- or private-sector medical services or for research or specialty medical services.

Educational land uses for this alternative (about 35 acres) would include reuse of the base elementary school and development of the office building complex west of the golf course for vocational-technical (vo-tech) training facilities for trades such as aviation repair, manufacturing, and computer operation. The existing buildings are currently used for administrative office uses, which would provide adequate classroom space. Like the Proposed Action, the elementary school would be reused for elementary and secondary education purposes in conjunction with the Rapides Parish School Board, probably as a model school, or it could be reused as an adult education center.

2.3.1.5 Commercial

Commercial land uses consist of approximately 140 acres throughout the central core of the base and would use primarily existing buildings, although open space would be available for construction of new buildings. The commercial area bordered by the general aviation area, the vo-tech area, and the north apron is proposed for office land uses because several buildings in this area would be appropriate for reuse for administrative/office activities such as finance, insurance, and corporate backroom use. Corporate backroom uses could include credit card bill processing, telemarketing, or coupon sorting/processing operations, which do not require elaborate facilities.

The commercial area north of the golf course is proposed for development as a regional conference center, which could reuse the existing visitors' quarters and five of the seven dormitory buildings, the officers' club, and various other buildings. The area adjacent to the conference center would be used for commercial support activities. This area currently is used for such purposes and includes banking, retail sales, post office, theater, and some indoor recreation uses.

A regional conference center would provide additional opportunities for expansion of the local conference/convention business with the available dining, housing, and meeting space. The commercial support area could include neighborhood-level commercial services for the residents who would live in the existing military family housing area, daytime workers, and conference attendees.

2.3.1.6 Residential

The existing military family housing area is proposed to be reused for a retirement community/senior citizen housing in the area east of the golf course clubhouse and for market housing in the portions of the military housing area in the far eastern area of the base (i.e., the area accessed from England Drive [State Highway 498]) and the area south of the elementary school and adjacent recreational facilities. The base trailer park would also be reused for market housing.

2.3.1.7 Public/Recreational

For the General Aviation Alternative, the existing 9-hole golf course would also be expanded on approximately 70 acres to a regulation 18-hole course in the area southeast of the south apron. The other recreational facilities and Flying Tiger Heritage Park would likewise be retained as described for the Proposed Action.

2.3.1.8 Agricultural

For this alternative, agricultural uses totaling approximately 300 acres are proposed for the western portion of the existing airfield. The Air Force currently leases the areas between the runways and taxiways to local farmers for hay cropping. Agricultural reuses could include continued hay cropping, farming of typical regional crops (e.g., soybeans and cotton), aquaculture businesses (e.g., crawfish and catfish farms), and tree and plant nurseries, a major industry in Rapides Parish.

2.3.1.9 Vacant Land

Approximately 130 acres are designated as vacant land, including the three areas identified as vacant land for the Proposed Action and the petroleum, oil, and lubricants area along the northeastern boundary of the base.

2.3.1.10 Employment and Population

The General Aviation Alternative is expected to generate a peak of approximately 50 direct, short-term construction-related jobs (1996) and about

1,500 direct long-term jobs by 2013. An additional 950 secondary jobs are expected to be generated in Rapides Parish as a result of base reuse with this alternative. As described for the Proposed Action, it is expected that many of the reuse jobs would be filled by people who are unemployed as a result of the closure of England AFB. Estimated employment at closure and at 5, 10, and 20 years with reuse is presented in Table 2.3-5. Employment related to base reuse is expected to result in the inmigration of approximately 400 persons into Rapides Parish by 2013.

Table 2.3-5

Reuse-Related Employment and Population Effects - General Aviation Alternative

	Closure	1998	2003	2013
Employment				
Direct	50	583	1,112	1,545
Secondary	20	410	707	947
Population Increase	0	140	265	389

2.3.1.11 Transportation

For this alternative, like for the Proposed Action, the extension of Frank Andrews Boulevard is proposed to provide more direct access from State Highway 1 and Interstate 49 to the industrial and commercial areas of the base. The extension of this road would be the same as described for the Proposed Action.

Based on the land use and employment projections, average daily vehicular traffic to and from base property would be approximately 6,200 trips by 2013. Most of the vehicular traffic would occur during daytime hours.

2.3.1.12 Utilities

By 2013, the projected reuses of England AFB and associated population increases in the region surrounding the base with the General Aviation Alternative would generate the following increases in utility demands over projected closure conditions:

- Water - 0.26 MGD, or an increase of approximately 1.2 percent;
- Wastewater - 0.18 MGD, or an increase of about 1.9 percent;
- Solid waste - 4.7 tons per day, or an increase of approximately 3.2 percent;

- Electricity - 0.18 million kWh per day, or an increase of about 1 percent; and
- Natural gas - 0.14 MMcf per day, or an increase of approximately 2.0 percent.

Proposed reuses associated with the General Aviation Alternative would generate the following onsite utility demands by 2013:

- Water - 0.18 MGD;
- Wastewater - 0.12 MGD;
- Solid waste - 3.9 tons per day;
- Electricity - 0.04 million kWh per day; and
- Natural gas - 0.1 MMcf per day.

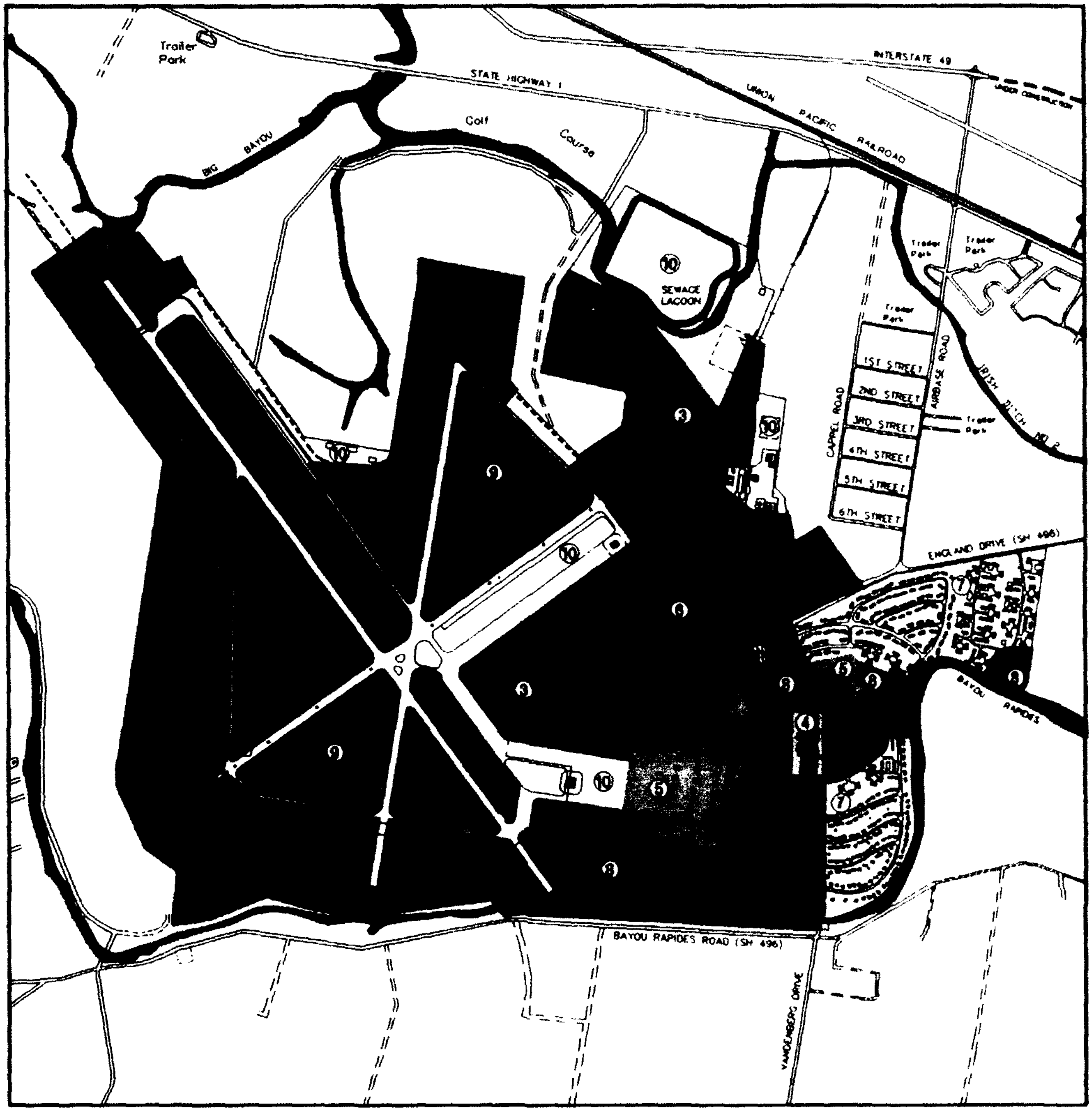
No utility system improvements have been identified for this alternative.

2.3.2 Business/Technology Center Alternative

This alternative emphasizes conversion of the base to entirely nonaviation reuses and focuses on redevelopment of England AFB into a business/technology center. Existing buildings would maintain land uses similar to their existing uses to minimize redevelopment costs. Proposed land uses for the developed portion of the base include industrial, both manufacturing and warehousing; commercial; residential; institutional, both medical and educational; and recreational. The existing airfield would be converted to various agricultural uses. Land use areas are shown in Figure 2.3-2, and acreages by land use category are listed in Table 2.3-6.

To further define the Business/Technology Center Alternative for the purpose of this analysis, assumptions were made for the following:

- Layout and acreage totals for proposed land use categories;
- Extent of construction/demolition activities required;
- Acreage of ground disturbance resulting from construction/demolition activities;
- Employment and population projections through 2013 for the Alexandria/Pineville area and Rapides Parish;



EXPLANATION

- ① Airfield *
- ② Aviation Support
- ③ Industrial
- ④ Institutional (Medical)
- ⑤ Institutional (Education)
- ⑥ Commercial
- ⑦ Residential
- ⑧ Public/Recreation
- ⑨ Agriculture
- ⑩ Vacant Land**
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension

* Not Applicable

** Within Base Boundary

0 500 1000 2000 Feet

Business/Technology Center Alternative

Figure 2.3-2

Table 2.3-6

Land Use Acreage - Business/Technology Center Alternative

Land Use	Acreage
Base Property	
Airfield	0
Aviation Support*	1
Industrial	239
Institutional (Medical and Educational)	84
Commercial	111
Residential	182
Public/Recreational	315
Agricultural	944
Vacant Land	406
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

Note: *Radar facility retained by the FAA.

- Traffic generation and daily trip projections through 2013;
- Proposed transportation improvements;
- Utility requirement projections through 2013; and
- Phasing plans for reuse of England AFB through 2013.

The amount of development for each land use category assumed to occur for this alternative, including existing facility demolition and retention and new facility construction, is summarized in Table 2.3-7. Acreages assumed to be disturbed during each phase of development are summarized in Table 2.3-8.

Table 2.3-7

Facility Development - Business/Technology Center Alternative

	Floor Space (in thousands of square feet)		
Land Use	Existing Facility Demolition	Existing Facility Retention*	New Facility Construction
Airfield	0	0	0
Aviation Support	0	21	0
Industrial	10	422	0
Institutional (Medical and Educational)	4	315	0
Commercial	19	531	0
Residential	0	815	0
Public/Recreational	19	100	0
Agricultural	15	0	0

Note: *Includes only facilities over 1,000 square feet in area.

Table 2.3-8

Acres Disturbed by the Business/Technology Center Alternative, By Phase

Land Use	1993-1998	1998-2003	2003-2013	Total
Industrial	15	0	0	15
Public/Recreational	100	0	0	100
Agricultural	600	300	0	900
TOTAL:	715	300	0	1,015

Proposed reuses associated with each land use category shown in Figure 2.3-2 are described below.

2.3.2.1 Aviation Support

Although this alternative is considered a nonaviation alternative, one aviation support land use is included, the retention of the FAA radar facility near the southern boundary of the base.

2.3.2.2 Industrial

Proposed industrial reuses, totaling approximately 240 acres, include manufacturing in the western portion of the developed area of the base and warehousing or other industrial uses in the northeastern portion of the base. The proposed manufacturing area consists of many buildings along with large internal open spaces that could accommodate printing/publishing, wood products, or other manufacturing operations.

The existing warehouses and munitions storage facilities in the northeastern portion of the base could be used as private storage facilities or as warehouse facilities for transportation/distribution companies. The existing base transportation and civil engineering complex could be reused for other industrial uses, including as a trucking center or for automotive components shops.

2.3.2.3 Institutional (Medical and Educational)

The base hospital would be reused to provide either public- or private-sector medical services or for research or specialty medical services.

Educational land uses, consisting of approximately 85 acres, would include reuse of the base elementary school and development of the south aircraft parking apron and adjacent flightline buildings into vo-tech training facilities. As described for the Proposed Action, the elementary school would be reused for elementary and secondary education purposes in conjunction with the Rapides Parish School Board, probably as a model school, or it could be reused as an adult education center.

2.3.2.4 Commercial

Commercial land uses totaling approximately 110 acres, are similar to those identified for the General Aviation Alternative, including a regional conference center, administrative offices, and a commercial support area. The existing administrative office building complex west of the golf course would be reused for a similar purpose. The older buildings in this area closer to the north apron would be appropriate for corporate backroom office operations described previously for the General Aviation Alternative.

The proposed conference center and commercial support area uses, northeast of the office area, are similar to those described for the General Aviation Alternative. The regional conference center for this alternative includes a slightly different mix of buildings, some of which would require renovation to provide adequate meeting space. The conference center layout would incorporate all three of the dormitory/visitors' quarters complexes, the officers' club, and the base chapel. The commercial support area would involve reuse of the existing base exchange retail store, commissary, bank, credit union, and post office.

2.3.2.5 Residential

The existing military family housing area for this alternative is proposed to be reused entirely as market housing.

2.3.2.6 Public/Recreational

Most of the existing recreational areas at England AFB would be retained for the Business/Technology Center Alternative. The golf course would be expanded to a regulation 18-hole course similar to the Proposed Action and General Aviation Alternative, but would be developed on a larger area (approximately 100 acres) in the southern portion of the base. A new clubhouse would also be constructed. Recreational land uses would incorporate 315 acres of the base.

Recreational facilities north of the golf course and Flying Tiger Heritage Park would be expanded to include additional fields and courts. The recreational facilities east of Vandenberg Drive and south of the elementary school would continue to be used in their present capacity. These areas would be used to provide recreational facilities for the local community.

2.3.2.7 Agricultural

For this alternative, agricultural uses totaling approximately 945 acres are proposed for the airfield portion of the base. As stated previously, the Air Force currently leases the areas between the runways and taxiways to local farmers for hay cropping. Agricultural uses could include continued hay cropping, farming of typical regional crops (e.g., soybeans and cotton), aquaculture businesses (e.g., crawfish and catfish farms), and tree and plant nurseries, a major industry in Rapides Parish. Access would be provided via the existing runways and taxiways.

2.3.2.8 Vacant Land

Approximately 400 acres of the base would be retained as vacant land for this alternative, including the three areas identified as vacant land for the Proposed Action; the petroleum, oil, and lubricants area; and the portions of the runways and taxiways not used for other proposed reuses.

2.3.2.9 Employment and Population

The Business/Technology Center Alternative is expected to generate a peak of approximately 100 direct, short-term construction-related jobs (2003) and about 1,700 direct long-term jobs by 2013. An additional 900 secondary jobs are expected to be generated in Rapides Parish as a result of base reuse with this alternative. As described for the Proposed Action, it is expected that many of the reuse jobs would be filled by people who are unemployed as a result of the closure of England AFB. Estimated employment at closure and at 5, 10, and 20 years with reuse is presented in Table 2.3-9. Employment related to base reuse is expected to result in the inmigration of approximately 600 persons into Rapides Parish by 2013.

Table 2.3-9

Reuse-Related Employment and Population Effects - Business/Technology Center Alternative

	Closure	1998	2003	2013
Employment				
Direct	50	743	1,300	1,724
Secondary	20	397	699	926
Population Increase	0	163	273	573

2.3.2.10 Transportation

For this alternative, as for the Proposed Action, the extension of Frank Andrews Boulevard is proposed to provide more direct access from State Highway 1 and Interstate 49 to the industrial and commercial areas of the base. The extension of this road would be the same as described for the Proposed Action.

Based on land use and employment projections, average daily vehicular traffic to and from base property would be approximately 6,900 trips by 2013. Most vehicular traffic would occur during daytime hours.

2.3.2.11 Utilities

By 2013, the projected reuses of England AFB and associated population increases in the region surrounding the base with the Business/Technology Center Alternative would generate the following increases in utility demands over projected closure conditions:

- Water - 0.32 MGD, or an increase of approximately 1.5 percent;
- Wastewater - 0.22 MGD, or an increase of about 2.4 percent;
- Solid waste - 5.6 tons per day, or an increase of approximately 3.7 percent;
- Electricity - 0.25 million kWh per day, or an increase of about 1.4 percent; and
- Natural gas - 0.17 MMcf per day, or an increase of approximately 2.4 percent.

Proposed reuses associated with the Business/Technology Center Alternative would generate the following onsite utility demands by 2013:

- Water - 0.2 MGD;
- Wastewater - 0.13 MGD;
- Solid waste - 4.3 tons per day;
- Electricity - 0.05 million kWh per day; and
- Natural gas - 0.11 MMcf per day.

No utility system improvements have been identified for this alternative.

2.3.3 Recreation/Tourism Alternative

This alternative also emphasizes conversion of the base to entirely nonaviation reuses, but focuses on redevelopment of England AFB into a recreation/tourism area for local residents as well as tourists from the surrounding region. The layout of land uses in the developed area is designed to incorporate existing buildings into land uses that are similar to their existing uses to minimize redevelopment costs. Land uses proposed for this area include industrial, commercial, residential, institutional (medical and educational), and recreational. For the undeveloped areas of the base, primarily consisting of the airfield, the development of extensive recreational facilities is proposed, with a portion of the airfield converted to various agricultural uses. Land use areas are shown in Figure 2.3-3, and acreages by land use category are summarized in Table 2.3-10.

Table 2.3-10

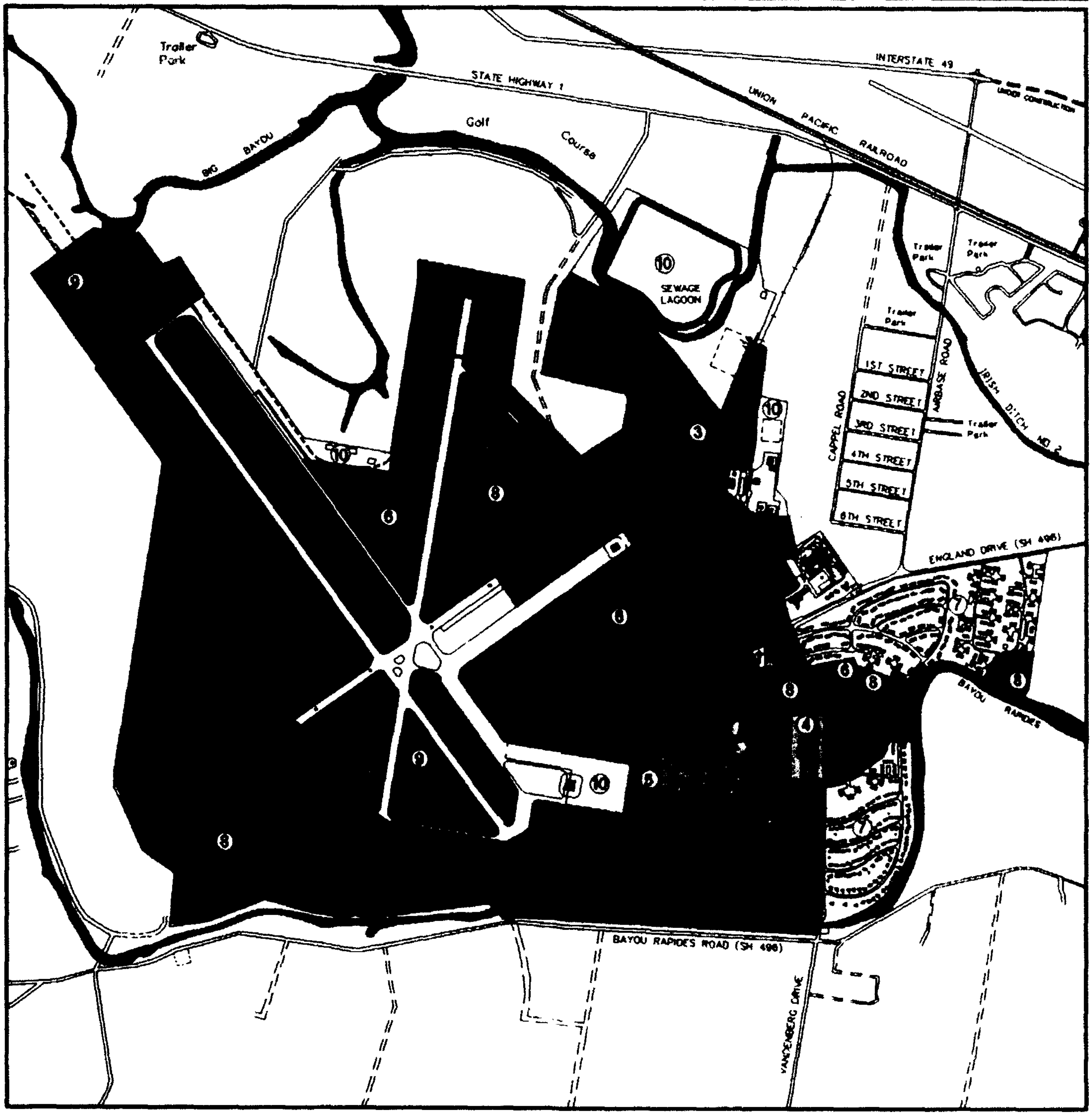
Land Use Acreage - Recreation/Tourism Alternative

Land Use	Acreage
Base Property	
Airfield	0
Aviation Support*	1
Industrial	168
Institutional (Medical and Educational)	73
Commercial	246
Residential	204
Public/Recreational	889
Agricultural	347
Vacant Land	354
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

Note: *Radar facility retained by the FAA.

To further define the Recreation/Tourism Alternative for the purpose of this analysis, assumptions were made for the following:

- Layout and acreage totals for proposed land use categories;
- Extent of construction/demolition activities required;
- Acreage of ground disturbance resulting from construction/ demolition activities;
- Employment and population projections through 2013 for the Alexandria/Pineville area and Rapides Parish;
- Traffic generation and daily trip projections through 2013;
- Proposed transportation improvements;



EXPLANATION

- ① Airfield*
- ❷ Aviation Support
- ❸ Industrial
- ❹ Institutional (Medical)
- ❺ Institutional (Education)
- ❻ Commercial
- ⑦ Residential
- ❽ Public/Recreation
- ❾ Agriculture
- ⑩ Vacant Land**
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension

*Not Applicable

**Within Base Boundary

0 500 1000 2000 Feet

Recreation/Tourism Alternative

Figure 2.3-3

- Utility requirement projections through 2013; and

- Phasing plans for reuse of England AFB through 2013.

The amount of development for each land use category assumed to occur with this alternative, including existing facility demolition and retention and new facility construction, is summarized in Table 2.3-11. Acreages assumed to be disturbed during each phase of development are summarized in Table 2.3-12. Proposed reuses associated with each land use category shown in Figure 2.3-3 are described below.

Table 2.3-11

Facility Development - Recreation/Tourism Alternative

Land Use	Floor Space (in thousands of square feet)		
	Existing Facility Demolition	Existing Facility Retention*	New Facility Construction
Airfield	0	0	0
Aviation Support	0	21	0
Industrial	10	209	0
Institutional (Medical and Educational)	0	244	0
Commercial	31	806	0
Residential	0	815	0
Public/Recreational	29	31	0
Agricultural	8	0	0

Note: *Includes only facilities over 1,000 square feet in area.

Table 2.3-12

Acres Disturbed by the Recreation/Tourism Alternative, By Phase

Land Use	1993-1998	1998-2003	2003-2013	Total
Public/Recreational	100	375	250	725
Agricultural	175	175	0	350
TOTAL:	275	550	250	1,075

2.3.3.1 Aviation Support

The only aviation support reuse proposed for this alternative is the continued use of the FAA radar facility near the southern boundary of the base.

2.3.3.2 Industrial

Industrial uses, consisting of approximately 170 acres, are located in the northeastern portion of the base. Proposed industrial reuses in this area would be similar to those described for the General Aviation Alternative.

2.3.3.3 Institutional (Medical and Educational)

The base hospital would be reused as a private- or public-sector medical facility. The hospital could also be reused primarily to serve the retirement community proposed for a portion of the military family housing area.

Educational reuses for this alternative would consist of an approximately 60-acre vo-tech educational training complex centered on the south aircraft parking apron that would make use of the hangar and other aviation support facilities surrounding this apron.

2.3.3.4 Commercial

Proposed commercial reuses, totaling approximately 245 acres, would be located throughout the developed area of the base, and include a conference center, an office complex, a commercial center with indoor recreational facilities, and a church camp/day camp. In addition, an outdoor performance facility is proposed north of the runway intersection, and the existing base elementary school would be converted to a senior citizens' center.

The western portion of the developed area would be used for various administrative office uses. This area includes both existing office buildings which could be used for corporate-type offices for finance and insurance, and other administrative-based businesses. Other buildings in this area located along and near the flightline area could be reused to support corporate backroom operations such as those described previously for the General Aviation Alternative.

The area for the church camp/day camp proposed in the central portion of the commercial area currently consists of several dormitories, the base chapel, the noncommissioned officers' club and swimming pool, and several smaller buildings. This reuse would include development of day camps for children in the surrounding communities and/or church camps for residents of the surrounding communities as well as the region. The existing dormitories and associated meeting spaces would support these camp activities.

The commercial support center with indoor recreational/leisure facilities currently includes the base exchange retail store, the commissary, a bank and credit union, a post office, and various indoor recreational/leisure facilities, including a bowling alley, theater, and library. These facilities would be reused to serve conference center attendees, daytime workers, church and day campers, visitors to recreational facilities, and local residents.

The layout for the regional conference center for this alternative, while similar to layouts for the other two alternatives, would reuse more buildings. The conference center layout would incorporate three dormitory buildings, the visitors' quarters complex adjacent to Heritage Park, the officer's club and swimming pool, a cold storage facility, the base craft center, and several administrative office buildings.

2.3.3.5 Residential

For this alternative, the portion of the military family housing area adjacent to the Main Gate area would be reused for a retirement community. The multi-family housing (i.e., three- and four-plex facilities) immediately south and east of this area and southeast of the hospital would be used for vacation housing and lodging for visitors of the recreational complex and for conference center attendees. The portion of the military family housing area near the Back Gate consisting of single-family housing would be used for market housing.

2.3.3.6 Public/Recreational

For this alternative, approximately 890 acres of the base are designated for recreational uses. All of the existing recreational areas and facilities on the base would be retained, including Heritage Park. Like the other alternatives, this alternative would include expansion of the existing 9-hole golf course on approximately 100 acres to a regulation 18-hole course. In addition, two additional golf courses would eventually be developed to provide a total of 54 holes. The golf course expansions would be constructed on approximately 400 acres along the southern boundary of the base and north of Bayou Rapides to the west boundary of the base and incorporate some of the existing airfield.

In the northern portion of the existing airfield, additional recreational facilities would be constructed, including a theme park/water park and various types of athletic fields. These facilities would be adjacent to the outdoor performance facility described for the commercial land use category. The theme park would be designed to provide both interpretive and recreational value to attract visitors from the surrounding region. Themes such as central Louisiana culture or southern culture could be considered. The water park would be designed to attract visitors from the surrounding region.

2.3.3.7 Agricultural

Similar to the Business/Technology Center Alternative, approximately 350 acres of the existing airfield would be reused for various agricultural uses, including hay cropping, farming of typical regional crops (e.g., cotton or soybeans, aquaculture businesses, and tree and plant nurseries).

2.3.3.8 Vacant Land

With this alternative, approximately 355 acres are designated as vacant land, including the three areas of the base identified as vacant land for the Proposed Action; the petroleum, oil, and lubricants area; and portions of the runways and taxiways not used for other proposed reuses.

2.3.3.9 Employment and Population

The Recreation/Tourism Alternative is expected to generate a peak of approximately 150 direct, short-term construction-related jobs (2003) and about 1,600 direct long-term jobs by 2013. An additional 800 secondary jobs are expected to be generated in Rapides Parish as a result of base reuse with this alternative. As described for the Proposed Action, it is expected that many of the reuse jobs would be filled by people who are unemployed as a result of the closure of England AFB. Estimated employment at closure and at 5, 10, and 20 years with reuse is presented in Table 2.3-13. Employment related to base reuse is expected to result in the inmigration of approximately 400 persons to Rapides Parish by 2013.

Table 2.3-13

Reuse-Related Employment and Population Effects - Recreation/Tourism Alternative

	Closure	1998	2003	2013
Employment				
Direct	50	558	1,157	1,570
Secondary	20	295	612	826
Population Increase	0	145	303	423

2.3.3.10 Transportation

For this alternative, like for the Proposed Action, the extension of Frank Andrews Boulevard is proposed to provide more direct access from State Highway 1 and Interstate 49 to the industrial and commercial areas of the base. The extension of this road would be the same as described for the Proposed Action.

Based on land use and employment projections, average daily vehicular traffic to and from base property would be approximately 6,300 trips by 2013. Most of the vehicular traffic would occur during daytime hours.

2.3.3.11 Utilities

By 2013, the projected reuses of England AFB and associated population increases in the region surrounding the base with the Recreation/Tourism

Alternative would generate the following increases in utility demands over projected closure conditions:

- Water - 0.27 MGD, or an increase of approximately 1.3 percent;
- Wastewater - 0.19 MGD, or an increase of about 2.0 percent;
- Solid waste - 4.9 tons per day, or an increase of approximately 3.3 percent;
- Electricity - 0.19 million kWh per day, or an increase of about 1.0 percent; and
- Natural gas - 0.14 MMcf per day, or an increase of approximately 2.0 percent.

Proposed reuses associated with the Recreation/Tourism Alternative would generate the following onsite utility demands by 2013:

- Water - 0.18 MGD;
- Wastewater - 0.12 MGD;
- Solid waste - 3.9 tons per day;
- Electricity - 0.04 million kWh per day; and
- Natural gas - 0.1 MMcf per day.

No utility system improvements have been identified for this alternative.

2.3.4 Other Land Use Concepts

In compliance with the Federal Property and Administrative Services Act of 1949, the Air Force solicited proposals from other federal agencies regarding their interest in acquiring any lands or facilities identified for disposal at England AFB. However, no proposals for direct federal use or sponsorship of local governmental programs were received by the Air Force for use of lands or facilities on England AFB. In addition, no other formal proposals were received by the Air Force from any entity for use of lands or facilities at the base.

2.3.5 No-Action Alternative

The No-Action Alternative would result in the U.S. Government retaining ownership of the property after closure. The property would not be put to further use and the base would be preserved (i.e., placed in a condition to limit deterioration and ensure public safety). An Air Force Base Disposal Agency operating location (OL) would be established to ensure base resource protection, grounds maintenance, existing utilities operations, as necessary, and building care are accomplished. No other military activities/missions would be performed on the property.

The future land uses and levels of maintenance would be as follows:

- Maintain structures in mothballed condition to prevent deterioration. This would involve disconnecting or draining some utility lines and securing facilities.
- Isolate or deactivate utility distribution lines on the base.
- Provide limited maintenance on roads to ensure access.
- Provide limited grounds maintenance of open areas. This would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards.
- Maintain golf course to facilitate economical resumption of use.
- Maintain existing outleases that are not terminated at the time of base closure.

The OL will coordinate closure activities, establish a caretaker force to maintain Air Force properties after closure, and serve as the Air Force liaison supporting community reuse. For the purpose of environmental analysis, it was assumed that the OL and supporting contractors would comprise approximately 50 people at the time of closure.

The OL, as used in this document, may refer to Air Force disposal personnel or to one of the caretaker contractors. In some cases, each team may have distinct responsibilities. For example, with the No-Action Alternative, each contractor would be responsible for the management and disposition of their own hazardous materials and waste. The Air Force OL would be responsible for inspection and oversight to ensure that hazardous substance practices are in compliance with pertinent regulations.

The base would continue to receive potable water from the City of Alexandria, although the amount drawn would be significantly reduced. Nonessential water lines would be drained and shut off. The City of Alexandria would also continue to provide wastewater treatment under caretaker status, but the flow would be negligible. Solid waste collection at the base by a local contractor would likely be reduced to a negligible level with this alternative. The existing power and space-heating systems serving England AFB would likely be used at substantially reduced levels while the base is in caretaker status. Electrical power would be required for security lighting and other essential systems, and natural gas would probably be required in the winter to maintain minimal space heating in mothballed facilities.

2.3.6 Interim Uses

Interim uses would include predisposal short-term uses of the base facilities and property. Predisposal interim uses are conducted under lease agreements with the Air Force. The terms and conditions of the lease would ensure that predisposal interim uses do not prejudice future disposal and reuse plans of the base. The continuation of interim uses beyond the disposal date would be arranged through agreements with the new property owner(s).

A zero baseline representing conditions at the point of closure was used for the environmental analysis. The interim uses that could occur prior to property disposal are not considered within this baseline.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Other reuse proposals submitted for England AFB were addressed as either alternatives or other land use concepts and fell within the context of the reuse alternatives previously described. In addition to reuse proposals received, the Air Force identified potential reuse alternatives that would be reasonable for England AFB. The following options were considered and eliminated from detailed analysis.

2.4.1 Major Aircraft Maintenance/Overhaul Facility

Use of the base for a major aircraft maintenance/overhaul facility was not developed further because of the facility limitations inherent with the existing hangars, associated buildings and shops, and aircraft parking aprons. While the England AFB flightline area does include a number of aircraft hangars, the size of these hangars, built for fighter and attack aircraft, would not be suitable for handling larger aircraft, such as commercial airliners. Similarly, the parking apron areas are not sized to handle a large number of large aircraft simultaneously.

2.4.2 Regional Shopping Center

Although the Alexandria/Pineville area is the major commercial center for the central Louisiana region, given projected market demands based on the reduction in regional population associated with both the closure of England AFB and the realignment of units at Fort Polk (discussed in Section 2.5.1), and the availability of such a facility in Alexandria, development of a regional shopping center was not considered for detailed analysis.

2.4.3 Automobile Industry Test Facility

Development of England AFB as a major automobile industry test facility was not selected for further analysis because of the limited demand for such a facility, the infrastructure requirements necessary to support the facility, and the suitability of the site for such a facility.

2.4.4 Major Domestic Air Cargo Center

Use of England AFB as a major domestic air cargo center (i.e., overnight cargo) was not developed further because of limited market demand. Air cargo carriers are likely to locate at major regional airports.

2.5 OTHER FUTURE ACTIONS IN THE REGION

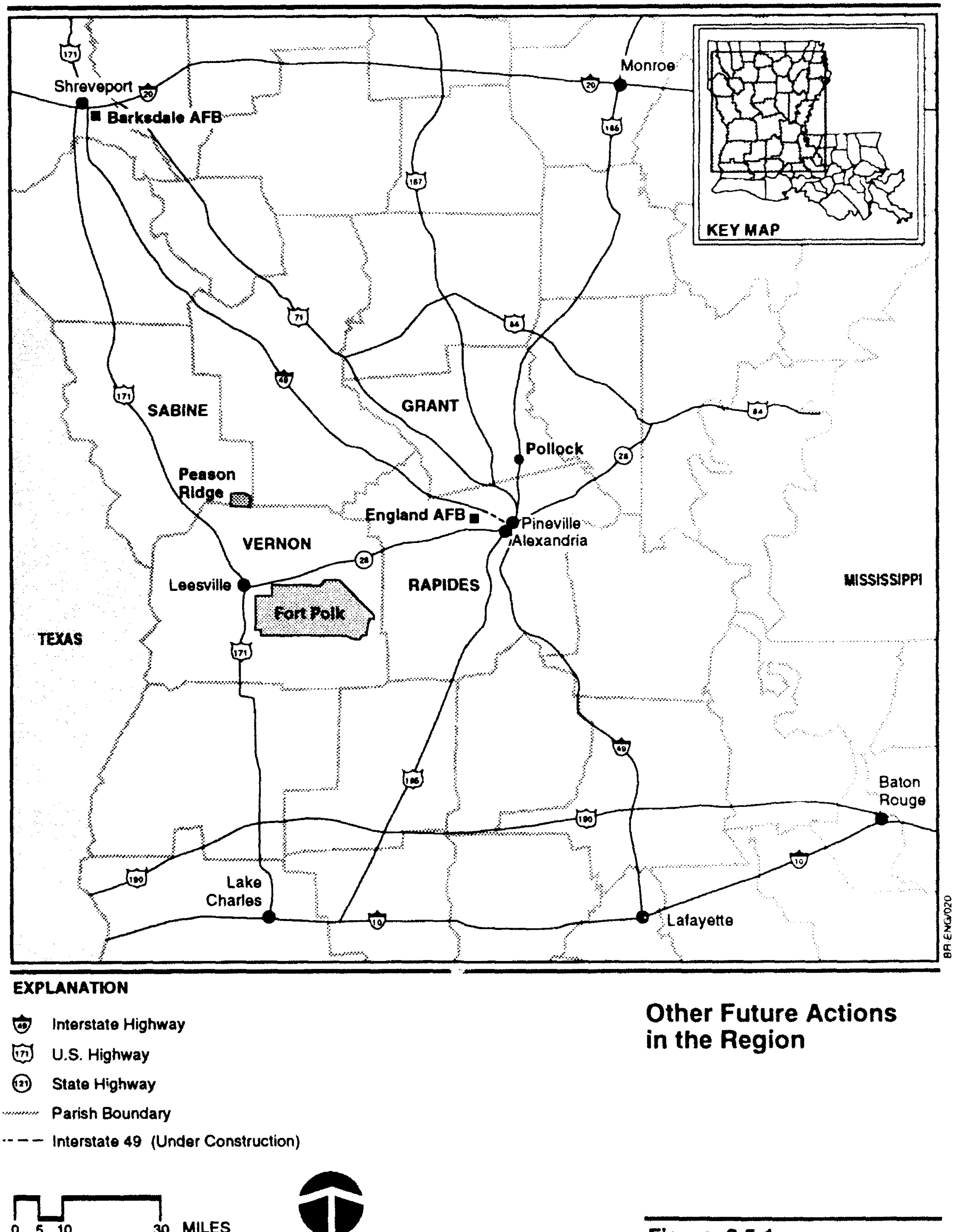
Reasonably foreseeable actions which could be considered as contributing to potential cumulative impacts on the disposal and reuse of England AFB include the realignment of units at Fort Polk, construction of a federal correctional facility near the Pollock Airport north of Alexandria, and completion of Interstate 49 in the Alexandria urban area (Figure 2.5-1).

2.5.1 Realignment of Units at Fort Polk

The Defense Base Closure and Realignment Commission, in addition to recommending the closure of England AFB, also recommended the realignment of the U.S. Army 5th Infantry Division (Mechanized) (ID(M)) from Fort Polk, Louisiana, to Fort Hood, Texas, and the realignment of the JRTC from Fort Chaffee, Arkansas, and the 199th Separate Motorized Brigade (SMB) from Fort Lewis, Washington, to Fort Polk. This action was mandated in the 1990 DBCRA. The realignment of the 5th ID(M) to Fort Hood will occur between September 1992 and January 1994, with the realignment of the JRTC and 199th SMB occurring between January 1993 and August 1993.

The realignment of the 5th ID(M) will result in a reduction of approximately 30,200 military personnel and dependents from the Fort Polk area. The realignment of the JRTC, the 199th SMB, and several smaller units to Fort Polk will result in the relocation of approximately 15,600 personnel and dependents to Fort Polk, resulting in a net reduction of about 14,600 people, primarily from Vernon Parish.

The mission of the JRTC is to provide advanced-level joint training for Army and Air Force contingency forces under simulated conditions which replicate, as closely as possible, those of actual low- and medium-intensity conflicts. JRTC provides rotational units with the opportunity to conduct joint operations which emphasize contingency force missions. The major training effort of the JRTC is focused on Army light forces (e.g., airborne, air assault, ranger and light infantry battalions, special operations forces, and their associated combat



Other Future Actions in the Region

Figure 2.5-1

support and combat service support units). Training is augmented by heavy forces (armor/mechanized); operations elements from the Air Force Air Combat Command, Air Mobility Command, and Special Operations Command; and Navy Special Operations and fire support elements.

The JRTC will conduct training at Fort Polk, the Peason Ridge training area north of Fort Polk, and at the ISB. Three sites are under consideration for the ISB: Barksdale AFB near Shreveport, Louisiana; the Chennault Industrial Airfield in Lake Charles, Louisiana; and England AFB, as described previously in this chapter (Section 2.2). The Opposing Force for each operational exercise, portrayed by the 199th SMB, will operate out of Fort Polk, and Air Force operations that support JRTC will operate out of Little Rock AFB, Arkansas, or Barksdale AFB.

The Army has prepared an Environmental Assessment for the relocation of the JRTC and the 199th SMB to Fort Polk. This document and a Finding of No Significant Impact were published in July 1992. The Environmental Assessment concluded that the relocation actions would not have a significant impact on the environment at Fort Polk and would not result in cumulative impacts at the selected site of the ISB. Because Fort Polk is approximately 50 miles west of England AFB, the realignment actions at Fort Polk and the closure of England AFB are not expected to result in significant cumulative environmental impacts. However, the loss of over 14,600 persons in the central Louisiana region would contribute to potential socioeconomic effects on Rapides Parish.

2.5.2 Pollock Federal Correctional Facility

The U.S. Department of Justice, Bureau of Prisons, is proposing the construction of a 1,600-bed medium-security federal correctional facility near Pollock in Grant Parish. This project is currently in the planning stages; environmental studies are scheduled to begin in late 1992, with a final Record of Decision to be released in late 1993 or early 1994. Although specific information about the project is not available at this time, construction and operation of a correctional facility at this location is not expected to result in cumulative environmental impacts because of the project's distance from England AFB.

2.5.3 Interstate 49 - Alexandria Urban Segment

An approximately 20-mile segment of Interstate 49 through the Alexandria urban area is being constructed by the Louisiana Department of Transportation and Development. This $229-million construction project is scheduled for completion by late 1996. A 14-mile segment between the community of Boyce, 10 miles northwest of England AFB, and Airbase Road, north of the base, was recently completed and opened for public travel. Completion of the Alexandria urban segment will allow uninterrupted travel on Interstate 49 between Shreveport and Lafayette, and reduce traffic along State Highway 1 through the Alexandria/England AFB area.

2.6 COMPARISON OF ENVIRONMENTAL IMPACTS

A summary comparison of the influencing factors and environmental impacts on each biophysical resource affected by the Proposed Action and alternatives over the 20-year study period is presented in Tables 2.6-1 and 2.6-2. Influencing factors are nonbiophysical elements, such as population, employment, land use, aesthetics, public utility systems, and transportation networks, that directly affect the environment. These activities have been analyzed to determine their effects on the environment. Impacts to the environment are described briefly in the Summary and discussed in detail in Chapter 4.0.

Table 2.6-1

Summary of Reuse-Related Influencing Factors

Factor	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative			No-Action Alternative[1]
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013	
Ground Disturbance (acres by phase)	158	0	0	386	0	0	715	300	0	275	550	250	0
Aircraft Operations (annual)	29,120	32,080	36,030	10,690	12,190	13,950	0	0	0	0	0	0	0
Direct Employment	729	1,390	1,986	583	1,112	1,545	743	1,300	1,724	558	1,157	1,570	50
Secondary Employment	602	982	1,325	410	707	947	397	699	926	295	612	826	20
Population Increase	182	499	1,411	140	265	389	163	273	573	145	303	423	0
Traffic (average daily trips)	2,916	5,560	7,944	2,332	4,448	6,180	2,972	5,200	6,896	2,232	4,628	6,280	200
Water Demand (MGD)[2]	0.12	0.27	0.54	0.10	0.19	0.26	0.12	0.21	0.32	0.10	0.20	0.27	<0.01
Wastewater Generation (MGD)	0.09	0.19	0.38	0.07	0.13	0.18	0.08	0.14	0.22	0.07	0.14	0.19	<0.01
Solid Waste Production (tons per day)	2.2	4.6	8.1	1.8	3.4	4.7	2.2	3.9	5.6	1.7	3.6	4.9	0.13
Electricity Demand (million kWh/day)[3]	0.08	0.22	0.56	0.07	0.12	0.18	0.08	0.13	0.25	0.07	0.14	0.19	<0.01
Natural Gas Demand (MMcf/day)[4]	0.06	0.14	0.27	0.05	0.10	0.14	0.06	0.11	0.17	0.05	0.10	0.14	<0.01

Notes: [1]No-Action Alternative summarizes influencing factors relative to the closure baseline conditions.
[2]MGD = million gallons per day.
[3]kWh = kilowatt-hours.
[4]MMcf = million cubic feet.

Table 2.6-2
Summary of Impacts and Mitigation Measures From Reuse Alternatives

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Local Community					
Land Use and Aesthetics	• Retention and reuse of existing facilities. • Construction of new passenger terminal complex, industrial facilities, expanded golf course, and new access road to base. • No conflicts with offbase land use. • Little change in general base appearance.	• Retention and reuse of existing facilities. • Construction of industrial facilities, expanded golf course and new access road to base. • Portion of airfield converted to agricultural uses. • No offbase land use conflicts. • Little change in general base appearance.	• Retention and reuse of existing facilities. • Airfield converted to agricultural uses. • Construction of industrial facilities, expanded golf course, and new access road to base. • No offbase land use conflicts. • Some change in general base appearance.	• Retention and reuse of existing facilities. • Airfield converted to agricultural and recreational uses. • Construction of recreational facilities, including two golf courses and theme park/water park, and new access road to base. • No offbase land use conflicts. • Some change in general base appearance.	• No change in onbase land use. • No change in base appearance.
Transportation	• Additional average daily traffic (ADT) would not change existing roadway level of service. • No airspace conflicts.	• Similar to Proposed Action. ADT slightly lower.	• Similar to Proposed Action. ADT slightly lower.	• Similar to Proposed Action. ADT slightly lower.	• No effects on roadways or airspace.
Utilities	• Small increase in utility demands. • Minimal effect on local suppliers.	• Similar to Proposed Action. Demand slightly lower.	• Similar to Proposed Action. Demand slightly lower.	• Similar to Proposed Action. Demand slightly lower.	• Minimal increase in utility demands.
Hazardous Materials and Hazardous Waste Management					
Hazardous Materials Management	• Quantities used would increase over closure baseline. Specific chemical compositions and exact use rates are not known. • Each reuse tenant would have to comply with Superfund Amendments and Reauthorization Act Section 311, Title III. • Need for adequate emergency response capability. • Reusers would implement pollution prevention and minimization strategies recommended by the Environmental Protection Agency.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Small quantities of hazardous materials managed by Air Force.

Table 2.6-2, Page 2 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Hazardous Waste Management	• Increase in types and quantities of hazardous waste generated compared to closure baseline. • Individual reuse tenants would need to comply with Occupational Safety and Health Administration regulations (29 CFR).	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Small quantities of waste generated.
Installation Restoration Program	• Disposal of some England AFB properties could be delayed or limited as a result of continuing Installation Restoration Program activities.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• No impact.
Storage Tanks	• All underground and aboveground storage tanks *required in reuse activities* would be subject to all applicable federal, state, and local regulations. • Underground and aboveground tanks not meeting current regulations to be removed prior to disposal.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action. • Caretaker maintenance of aboveground tanks.
Asbestos	• All renovation and demolition of existing buildings with asbestos-containing materials would be subject to all applicable federal, state, and local regulations.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Continued management *of facilities containing* asbestos.
Pesticides	• Pesticide use would increase from amounts used under baseline (caretaker status) as a result of the increase in recreational and commercial land uses.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Minimal use as part of caretaker activities.
Polychlorinated Biphenyls (PCBs)	• The base has no PCB transformers or PCB-contaminated transformers. A number of PCB-containing capacitors will be removed prior to base disposal.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.

Table 2.6-2, Page 3 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Radon	• Radon screening survey results below Environmental Protection Agency-recommended mitigation level (i.e., < 4 picoCuries per liter of air).	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.
Medical/Biohazardous Waste	• With reuse of hospital, generation of medical/biohazardous wastes and disposal requirements would not appreciably change from preclosure conditions.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• None generated.
Natural Environment					
Soils and Geology	• About 160 acres of land would be disturbed. This would minimally alter the soil profiles and have little effect on local topography. • Slight erosion potential during construction.	• About 390 acres of land disturbed; impacts similar to the Proposed Action.	• About 1,015 acres of land disturbed mainly by agricultural activities; impacts similar to the Proposed Action.	• About 1,075 acres of land disturbed; impacts similar to the Proposed Action.	• No impact.
Water Resources	• 10% lower groundwater demand in 2013 than preclosure demand. • Stormwater discharge expected to contain lower levels of residual contaminants, resulting in improved surface water quality.	• 12% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• 11% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• 10% lower groundwater demand in 2013 than preclosure demand. • Other impacts similar to the Proposed Action.	• No impact.
Air Quality	• At regional scale, carbon monoxide (CO) would increase by 8% and volatile organic compounds (VOCs) by 5% over closure levels by 2013. • Other pollutants would increase less than 1%. • Local ambient pollutant concentrations would not exceed federal/state standards.	• CO and VOCs would increase by about 6% and 4%, respectively, by 2013. • No standards exceeded.	• CO and VOCs would increase by about 6% and 4%, respectively, by 2013. • No standards exceeded.	• CO and VOCs would increase by about 4% and 3%, respectively, by 2013. • No standards exceeded.	• No measurable increase in air pollutant emissions.

Table 2.6-2, Page 4 of 4

Resource Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative	No-Action Alternative
Noise	• Maximum of about 365 acres exposed to day/night average sound level (DNL) 65 dB or greater in 1998, decreasing to 625 acres in 2003. • About 10 residences in area. • Increased traffic noise along some roads, but no residences exposed to DNLs of 65 dB or greater.	• Maximum of about 430 acres exposed to DNL 65 dB or greater in 1998, decreasing to zero in 2003. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No aircraft noise. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No aircraft noise. • Increased traffic noise along some roads, but no residences exposed to DNL 65 dB or greater.	• No impact.
Biological Resources	• Potential to disturb 70 acres (maximum) of native vegetation and from 90-160 acres of already disturbed vegetation depending on siting of proposed reuses. • Adverse impacts associated with potential conversion of habitats (immature bottomland forest, shrubland, and hay cropping areas) to frequently mowed weedy areas.	• Potential to disturb 70 acres of native vegetation and 316 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• Potential to disturb 70 acres of native vegetation and 915 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• Potential to disturb 65 acres of native vegetation and 915 acres of already disturbed vegetation. • Other impacts similar to the Proposed Action.	• No impact. Potential increase in habitat value.
Cultural and Paleontological Resources	• No National Register of *Historic Places* prehistoric sites or historic standing structures have been identified.	• Same as Proposed Action.	• Same as Proposed Action.	• Same as Proposed Action.	• No onbase impacts.

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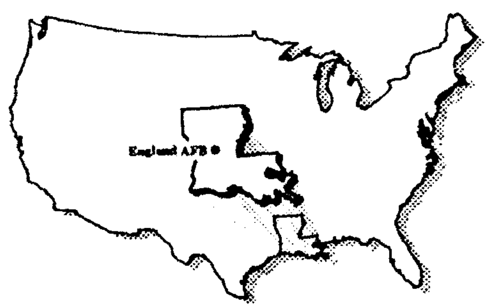


CHAPTER 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter includes a description of the existing environmental conditions at England Air Force Base (AFB), Louisiana, and its Region of Influence (ROI) at the time of base closure in December 1992. It provides the baseline information that was used to identify and evaluate environmental changes resulting from disposal and reuse of the base. Although this Environmental Impact Statement (EIS) focuses on the biophysical environment, some nonbiophysical elements are addressed to the extent that they directly affect the environment. The nonbiophysical elements (influencing factors) of population and employment, land use and aesthetics, public utility systems, and transportation networks in the region and local communities are addressed.

This chapter also includes a description of the storage, use, and management of hazardous materials and waste at the base, including storage tanks, asbestos, pesticides, polychlorinated biphenyls, radon, and medical and biohazardous waste. The current status of the Installation Restoration Program is also described. Finally, the chapter includes a description of the pertinent natural resources of soils and geology, water resources, air quality, noise, biological resources, and cultural and paleontological resources.

An ROI was defined for each resource potentially affected by the Proposed Action and alternatives, constituting the geographic area addressed as the affected environment. Although the base boundary may constitute the ROI limit for many resources, potential impacts associated with certain resources (e.g., air quality and water resources) may occur outside the base boundary.

The baseline conditions assumed for the purposes of analysis are the conditions at the time of closure of England AFB in December 1992. Therefore, the most descriptive year for the closure baseline is 1993. Impacts associated with disposal and/or reuse activities were evaluated by comparing projected conditions under various reuses to closure conditions. Baseline data for years preceding closure conditions are provided, where appropriate, to provide a basis for comparison over time. This provides the decision-maker and resource agencies a more comprehensive understanding of the potential long-term impacts of various reuses compared with the conditions when the installation was active.

3.2 LOCAL COMMUNITY

England AFB, consisting of 2,282 acres, is located in Rapides Parish (the Louisiana equivalent of a county) in central Louisiana (Figure 3.2-1). The base is approximately 5 miles west of the cities of Alexandria and Pineville, and 1 mile south of the Red River, which flows between Alexandria and Pineville (Figure 3.2-2). The Alexandria/Pineville area is the regional trade and medical center for central Louisiana.

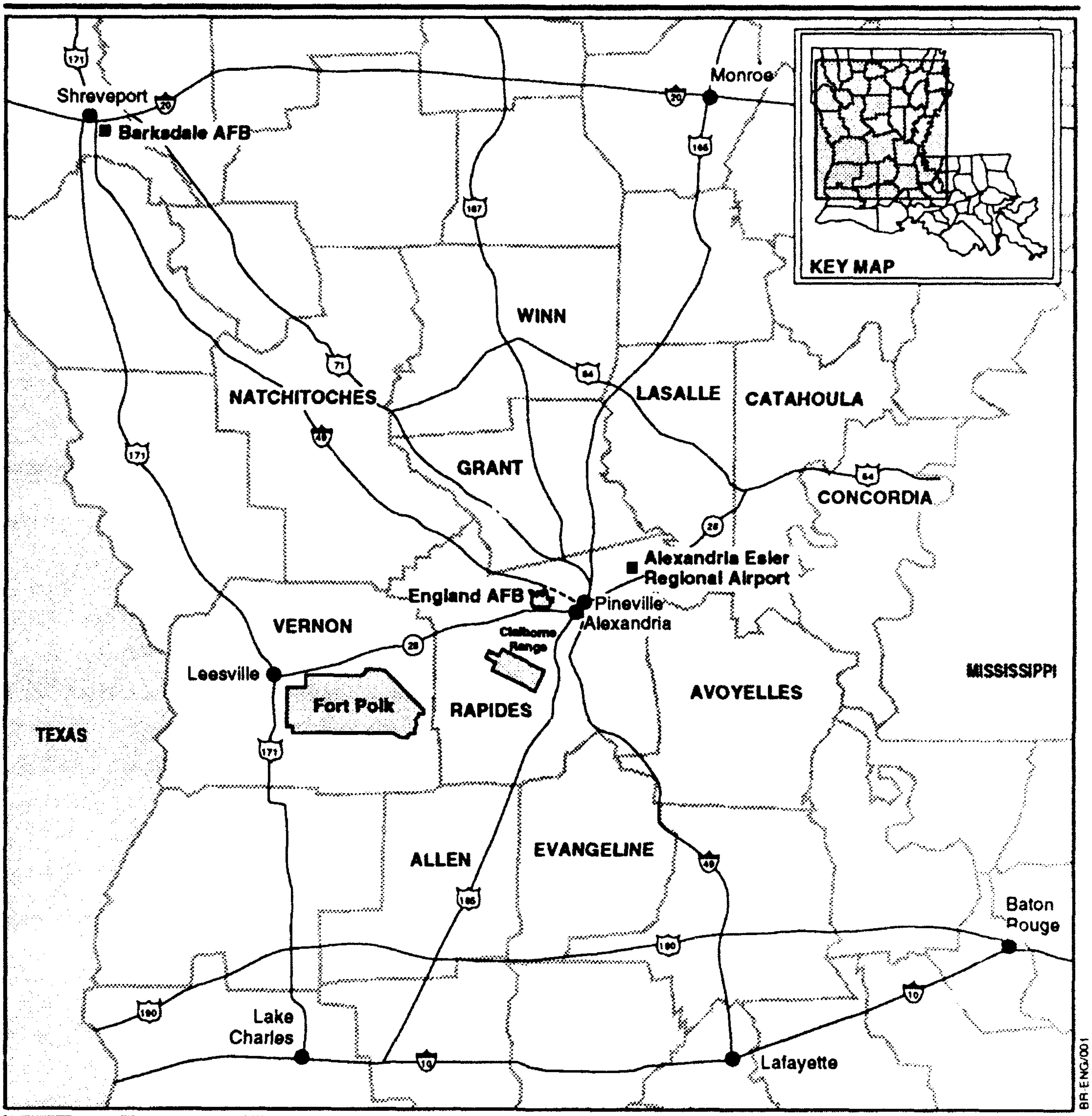
The topography of England AFB and surrounding portions of the Red River Valley is almost level. Elevations on the base range from 75 feet above mean sea level (MSL) near the golf course to 92 feet above MSL near the western boundary. The elevation of the airfield is 89 feet above MSL.

The climate at England AFB is generally subtropical and humid with warm summers and mild winters. A prevailing southerly wind produces movement of maritime air from the Gulf of Mexico, which helps to temper summer heat, shorten the duration of winter cold outbreaks, and provides a source of abundant moisture. Annual rainfall is slightly more than 50 inches. Severe local storms can occur in all seasons, but are most frequent in the spring. Storms with large hail or tornadoes are rare. Tropical hurricanes usually dissipate by the time they reach the England AFB area and are seldom destructive this far inland. The average temperature is 48°F in January and 79°F in July.

The principal roadways serving England AFB are Louisiana State Highways 1 and 498, which provide access to the Main Gate/Visitors' Center entrance. State Highways 496 and 28 and Vandenberg Drive provide access to the Back (Cape) Gate. Other principal highways in the region include U.S. 71, 165, and 167, east of the base. The urban segment of Interstate 49 through Alexandria is under construction north and east of the base. This segment is scheduled for completion by 1996 and will provide uninterrupted interstate highway travel between Shreveport and Lafayette.

Commercial air service is available at Alexandria Esler Regional Airport, approximately 13 miles northeast of Alexandria. Four commuter airlines operate from the airport with an average of 32 flights (arrivals and departures) per day. Freight rail service is provided by the Union Pacific Railroad with an east-west line north of the base, which follows the State Highway 1 corridor. Passenger rail service is not provided in Alexandria and Pineville.

England AFB is an Air Combat Command (formerly a Tactical Air Command [TAC]) base. Originally constructed as Alexandria Municipal Airport in 1942, the airfield was leased to the Army Air Force by the City of Alexandria with the onset of World War II. The base was formally activated as Alexandria Army Air Base in February 1943, and was used until 1945 as a training base for B-17 and later B-29 pilots. The base was redesignated Alexandria Army Air Base in January 1944. In 1946, the base was deactivated and placed on standby status with the city having "use privilege" as a municipal airport. With the



EXPLANATION

Interstate Highway

U.S. Highway

State Highway

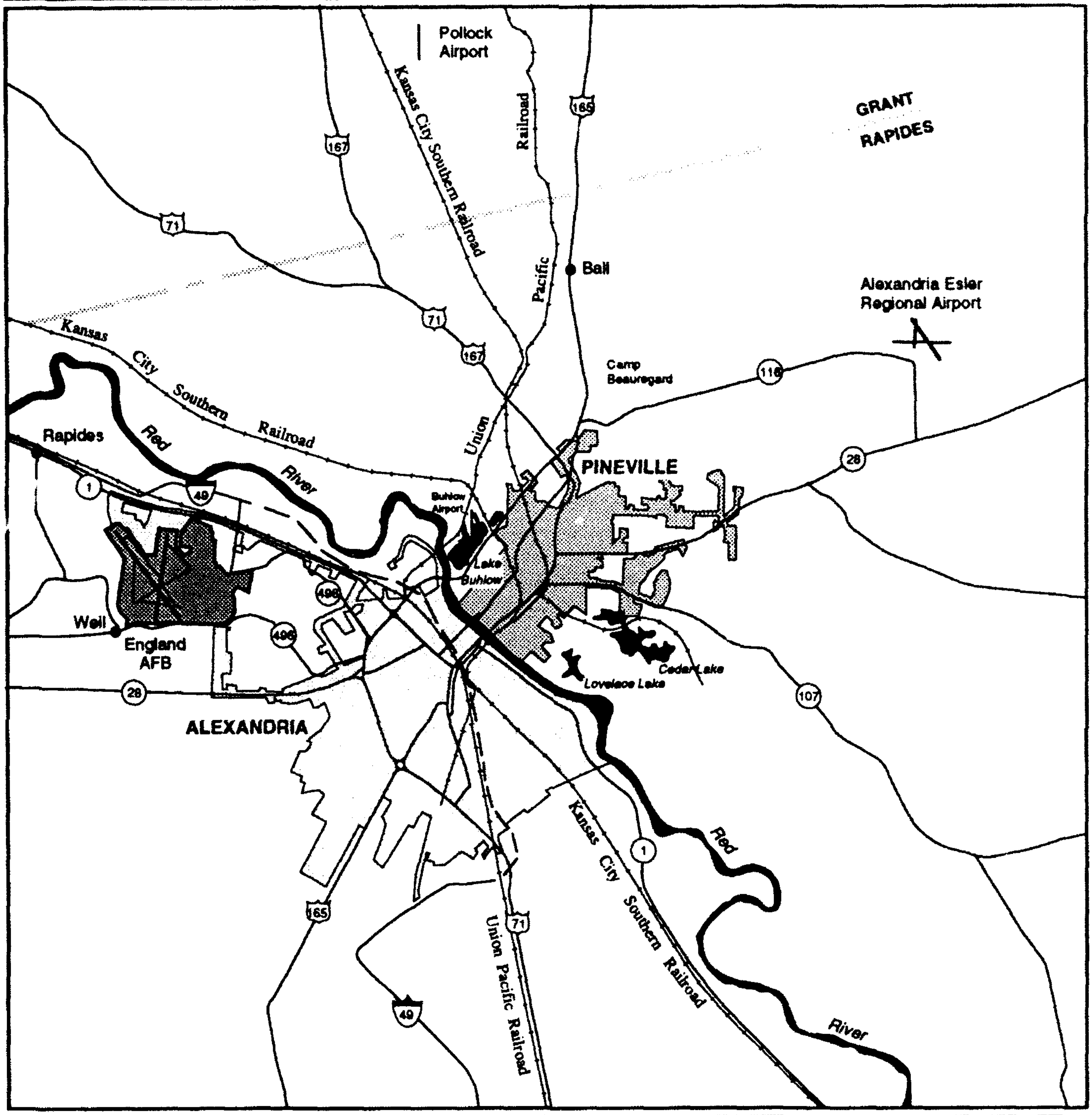
Parish Boundary

Highway Under Construction

0 5 10 30 MILES

Regional Map

Figure 3.2-1



EXPLANATION

- Interstate Highway
- U.S. Highway
- State Highway
- Highway Under Construction
- Railroad
- Parish Boundary
- Alexandria City Limits
- Pineville City Limits

0 1 2 3 MILES

Alexandria / England AFB Vicinity Map

Figure 3.2-2

outbreak of hostilities in Korea in 1950, the Air Force reactivated the base as Alexandria AFB. It was assigned to TAC to train tactical fighter units. In June 1955, the base was named England AFB in honor of Lieutenant Colonel John B. England.

Many different aircraft with widely varying missions have been based at England AFB. When reopened, the primary aircraft was the F-84. It has since been home to various TAC units' flying aircraft such as the F-80, T-33, F-86, F-100, and A-7. Since July 1972, the 23rd Tactical Fighter Wing (TFW) has been the host unit. The 23rd TFW, inactivated at England AFB on June 1, 1992, flew the Fairchild Republic A-10 Thunderbolt II aircraft.

3.2.1 Community Setting

The ROI for community setting includes Rapides Parish and the cities of Alexandria and Pineville. Rapides Parish had a 1990 population of 131,556, a decrease of 2.8 percent from the 1980 population of 135,282. Military personnel and dependents affiliated with England AFB, living both on and off the base, represented about 5.3 percent of the total parish population in 1990. Approximately 7 percent of the military population living off the base resided in adjacent parishes. Prior to the decision to close England AFB, the population in Rapides Parish was projected to decrease slightly to 122,039 by the year 2000. These estimates take into consideration unique past growth trends, the present composition of the population, and an independent set of state population projections.

Of the 131,556 people living in Rapides Parish in 1990, approximately 49,190 (37.4%) lived in Alexandria and about 12,250 (9.3%) lived in Pineville. Between 1980 and 1990, the population of Alexandria decreased by approximately 2,375 (4.6%), while the population of Pineville increased by over 200 (1.8%). Military personnel and dependents living off the base in Alexandria represented about 5.5 percent of its total population in 1990; those residing in Pineville comprised 7.8 percent of the city's population.

In 1989, the total number of jobs for all industrial sectors in the 11-parish central Louisiana region was approximately 158,575. In the same year, Rapides Parish had 61,609 jobs (including military), or 38.9 percent of the regional total. Primary industrial sectors in Rapides Parish included services (26.2%), government (20.4%), retail and wholesale trade (17.4%), and finance, insurance, and real estate (6.3%). The 1989 unemployment rate for Rapides Parish was 7.8 percent, lower than the 9.2 percent rate for the region and slightly below the statewide rate of 7.9 percent (Louisiana Department of Employment and Training 1989).

At the end of fiscal year (FY) 1991, England AFB employed a total of 3,003 permanent-party military personnel, 465 appropriated-fund civilian personnel, and 306 other civilian personnel. Forty percent of the permanent-party military personnel lived off the base, with 85 percent residing in

Alexandria and Pineville. Approximately 8,160 military retirees living in the central Louisiana region use the services and facilities at England AFB.

Rapides Parish had 51,239 housing units in 1990, an increase of 3,204 units over 1980 levels. The annual growth rate of the parish's housing stock was 0.7 percent between 1980 and 1990. In 1990, Alexandria and Pineville accounted for 20,348 and 5,086, respectively, of the total housing units in Rapides Parish. The annual growth rates in these communities were 0.4 percent and 0.8 percent, respectively.

Closure Baseline. With closure of the base, total employment by place of residence in Rapides Parish is projected to decrease by 5.3 percent, from 53,763 in 1991 to 50,901 by the end of 1992. Although the civilian labor force is projected to be reduced by about 650 persons as a result of outmigration, the unemployment rate is expected to increase from 7.8 percent in 1991 to 11.8 percent by the end of 1992.

The population of Rapides Parish is projected to decrease from 131,821 in 1991 to 122,609 by the end of 1992, a 7-percent decline. In Alexandria, the population is forecast to decrease from an estimated 49,454 in 1991 to 44,894 by the end of 1992, a reduction of 4,560 (9.2%). The population of Pineville is projected to decrease by 1,213 (9.8%), from a 1991 estimate of 12,321 to 11,108 by the end of 1992.

In 1992, the year-round housing stock in Rapides Parish included an estimated 51,339 units, 100 units more than the 1990 total of 51,239. With base closure, approximately 2,880 households are expected to leave Rapides Parish by the end of 1992. This reduction in the demand for permanent housing will increase the parish's available vacancy rate from an estimated 9.3 percent in 1991 to 15 percent by the end of 1992.

Alexandria had an estimated year-round housing stock of 20,420 in 1992, a slight increase over the 1990 total of 20,348. With base closure, approximately 1,600 households are expected to leave the city, increasing the available vacancy rate from an estimated 10 percent in 1991 to 18 percent by the end of 1992. Pineville's housing stock included an estimated 5,114 units in 1992. Relocation of an estimated 420 households will increase the available vacancy rate from an estimated 9.2 percent in 1991 to 17.7 percent by the end of 1992.

3.2.2 Land Use and Aesthetics

The ROI for land use and aesthetics includes England AFB and potentially affected adjacent lands within unincorporated areas of Rapides Parish and within the corporate limits of the City of Alexandria (Figure 3.2-2). The base is outside the city limits of Alexandria. Land uses at closure are assumed to be similar to existing land uses in the vicinity of the base because no specific development plans are proposed in this portion of Rapides Parish.

3.2.2.1 Land Use

Onbase Land Use. England AFB consists of 2,282 acres, of which 2,116 acres were donated and 166 acres are fee-owned. In addition, the base has easements totaling 319 acres, two leases totaling 2 acres, and a license for 1 acre on land outside the base boundary. Within the base is a cemetery covering approximately 1 acre near the golf course parking lot on privately owned land. This parcel is not included as part of the closure and disposal action.

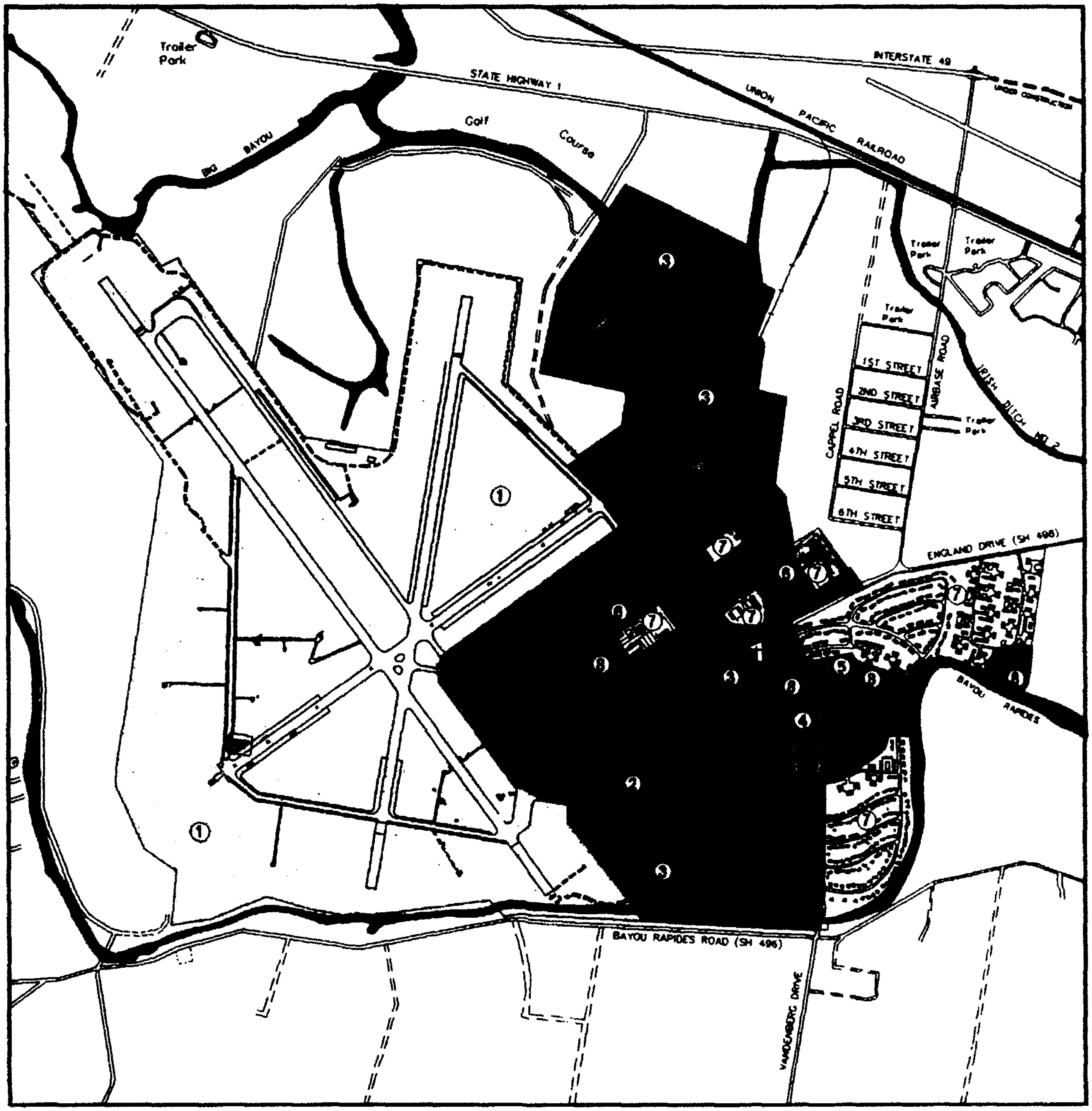
For the purpose of this EIS, existing land uses on England AFB have been grouped into various land use categories, including airfield, aviation support, industrial, institutional (educational and medical), commercial, residential, and public/recreational. These land uses are described below and shown on Figure 3.2-3.

Airfield land uses, consisting of approximately 1,230 acres, include the runways, taxiways, and navigational aids in the western portion of the base, and the Federal Aviation Administration (FAA) radar facility near the southern boundary of the base and south of the golf course. Aviation support land uses cover approximately 200 acres and consist of the aircraft parking aprons, and the hangars and other facilities along the flightline used to support the flying mission of the base.

Industrial land uses, consisting of approximately 331 acres, are located in the northeastern portion of the base, south of the golf course (the Defense Reutilization and Marketing Office [DRMO] storage yard), and south of the south aircraft parking apron (a construction/demolition debris landfill). Industrial areas in the northeastern portion of the base include the munitions storage area; civil engineering compound; base transportation center; petroleum, oil, and lubricants (POL) area; and several large warehouses. This area also includes several landfills and a sewage treatment and disposal pond (lagoon) near the northern base boundary that is no longer used.

Institutional (medical and educational) land uses on England AFB include the base hospital, the base elementary school, and the child care center. These land uses, covering approximately 25 acres, are located near the military family housing area in the southeastern portion of the base. Commercial land uses, covering approximately 115 acres, consist of various retail-type facilities, including the commissary, base exchange, post office, bowling center, theater, bank, credit union, and club dining facilities, and various administrative offices located throughout the developed area of the base, primarily west of the golf course.

There are approximately 210 acres of residential land uses, consisting of three unaccompanied personnel housing areas which include a total of seven dormitories and three visitors' quarters; the military family housing area, which includes single- and multi-family housing units (598 total); and the base trailer park. The three unaccompanied personnel housing areas are north and west



EXPLANATION

1 Airfield
2 Aviation Support
3 Industrial
4 Institutional (Medical)
5 Institutional (Education)
6 Commercial
7 Residential
8 Public/Recreation
9 Agriculture*
10 Vacant Land*
*Not Applicable
Private Land (Cemetery)

0 500 1000 2000 Feet

Existing Land Use on England AFB

Figure 3.2-3

of the golf course. The military family housing area is in the southeastern portion of the base east of the golf course. The base trailer park is north of the accompanied housing areas and the Main Gate.

Public/recreational land uses, covering approximately 170 acres, include a nine-hole golf course, the base gymnasium, an arts and crafts center, a running track, and numerous ball fields, tennis courts, and picnic facilities. These facilities are scattered throughout the base, but are concentrated in the southeastern portion, adjacent to the military family housing area. Recreational land uses also include Flying Tiger Heritage Park, which has a permanent display of five aircraft.

Although no specific areas of the base are designated for agricultural land uses, approximately 800 acres in the airfield portion of the base are leased for hay production.

Issues related to onbase land use, development, and capital improvements are addressed in the *Commander's Long Range Facility Improvement Plan, England 2000* (U.S. Air Force 1990a). This plan summarizes existing land uses, needs and constraints, and goals and objectives as they existed prior to the base closure announcement. The plan was developed to provide efficient, economical goals for base physical facilities planning while protecting environmental and cultural resources. Land development restrictions within the airfield and flightline areas of the base are also addressed in the *Air Installation Compatible Use Zone (AICUZ), England Air Force Base, Louisiana* (U.S. Air Force 1983).

As previously described, the base maintains easements totaling 319 acres on several parcels of land adjacent to the base. Six easements are on tracts of land adjacent to both ends of the northwest/southeast-oriented runway (Runway 14/32). These areas are located within the runway's clear zone as defined under the AICUZ (described below). In addition, the base has two easements for a small area east of the north end of Runway 14/32. These are explosive safety easements for an explosive cargo loading pad near the end of the runway. The base also has three small easements for access to airfield navigation aids located in agricultural fields near the base.

In addition to the easements, the base has two leases with local property owners for navigation aids and an access road to one of them. The base also maintains a license agreement with the Union Pacific Railroad for a sanitary sewer line that parallels the railroad spur into the base from the railroad's mainline.

England AFB also uses the approximately 25,770-acre Claiborne Range, an air-to-ground training range in the Kisatchie National Forest about 12 miles southwest of the base. The range is managed and controlled by the U.S. Forest Service. The Air Force has a special use permit for 3,207 acres (the impact area and surrounding safety zone) from the U.S. Forest Service under a 5-year agreement. The range impact area covers about 670 acres.

The permit was terminated in June 1992 and a new special use permit will be negotiated with the 917th TFW (Reserve) at Barksdale AFB.

In addition, the 38-acre Cotile Lake recreational area, located 10 miles west of the base, is leased on a 5-year basis from a private landowner. The lease expired in June 1992. England AFB also controls a 4-acre radar station located near Lake Charles, Louisiana, known as Lake Charles Air Force Station; this site is used in cooperation with Fort Polk. The site will no longer be used by England AFB when the base closes in December 1992; the site is in the process of being transferred to the FAA.

Adjacent Land Use. Most land uses surrounding England AFB are low-density residential and agricultural; some commercial and light industrial land uses are scattered throughout the area, particularly along the State Highway 1 and 28 corridors. Land uses north of the base are restricted by the Red River floodplain (Figure 3.2-4). Future urban development in the region would most likely occur in the unincorporated areas between the base and the western corporate limits of Alexandria.

Land uses north of the base include a private country club and golf course, a pistol range managed by the City of Alexandria within its corporate limits, and agricultural/open space in an unincorporated area of Rapides Parish. Land uses south of the base are primarily agricultural; several recreational fields and the Renaissance Center, a juvenile detention facility, are located immediately south of the base boundary. The area directly south of the military family housing area is within the city limits of Alexandria; the remainder of the area is an unincorporated area of Rapides Parish (Figure 3.2-2).

Residential development occurs northeast and east of the base along Airbase Road and State Highways 1 and 498, including single-family residences and several mobile home parks. Land use west of the base is primarily agricultural with some scattered residential development. Northwest of the base are some low-density residential areas and a trailer park.

Air Force Policies Affecting Adjacent Land Uses. The Air Force has developed the AICUZ program to minimize development that is incompatible with aviation operations in areas on and adjacent to military airfields. The AICUZ land use recommendations are based on land uses compatible with exposure to aircraft noise and safety considerations. Data on noise contours and safety zones are combined to make 13 Compatible Use Districts (CUDs). CUDs are delineated specifically for each base, using operational information derived from the base mission. Municipalities with jurisdiction over adjacent lands may zone this land in accordance with AICUZ recommendations, but they are not required to do so. The current AICUZ study for England AFB was completed in 1983 and revalidated in 1990 (U.S. Air Force 1990c).

AICUZ noise contours are based on standard noise ratings that are calculated from aircraft flight patterns, number and type of aircraft, power settings, time of operations, and climatic conditions. A day-night weighted average sound

EXPLANATION

①	Airfield*	⑤	Institutional (Education)	⑨	Agriculture
②	Aviation Support*	⑥	Commercial	⑩	Vacant Land
③	Industrial*	⑦	Residential	⑪	Institutional (Youth Home)
④	Institutional (Medical)*	⑧	Public/Recreation/Riparian		*Not Applicable

0 500 1000 2000 Feet

Offbase Land Use in the Vicinity of England AFB

Figure 3.2-4

level (DNL) is used to describe the noise environment. Noise contours for preclosure conditions at England AFB are presented and discussed in Section 3.4.4. Based on the noise contours developed for the 1983 AICUZ study, approximately 6,740 acres outside the base boundary are exposed to a DNL of 65 decibels and above. Within these areas are the residential areas northwest of the base on the north and south side of State Highway 1.

The AICUZ delineates areas at both ends of the runway where the probability of aircraft accidents is highest, based on statistical analysis of past accident data. Certain land use restrictions are recommended in high-risk areas, identified as clear zones and Accident Potential Zones (APZs) I and II. The zones for England AFB are shown in Figure 3.2-5.

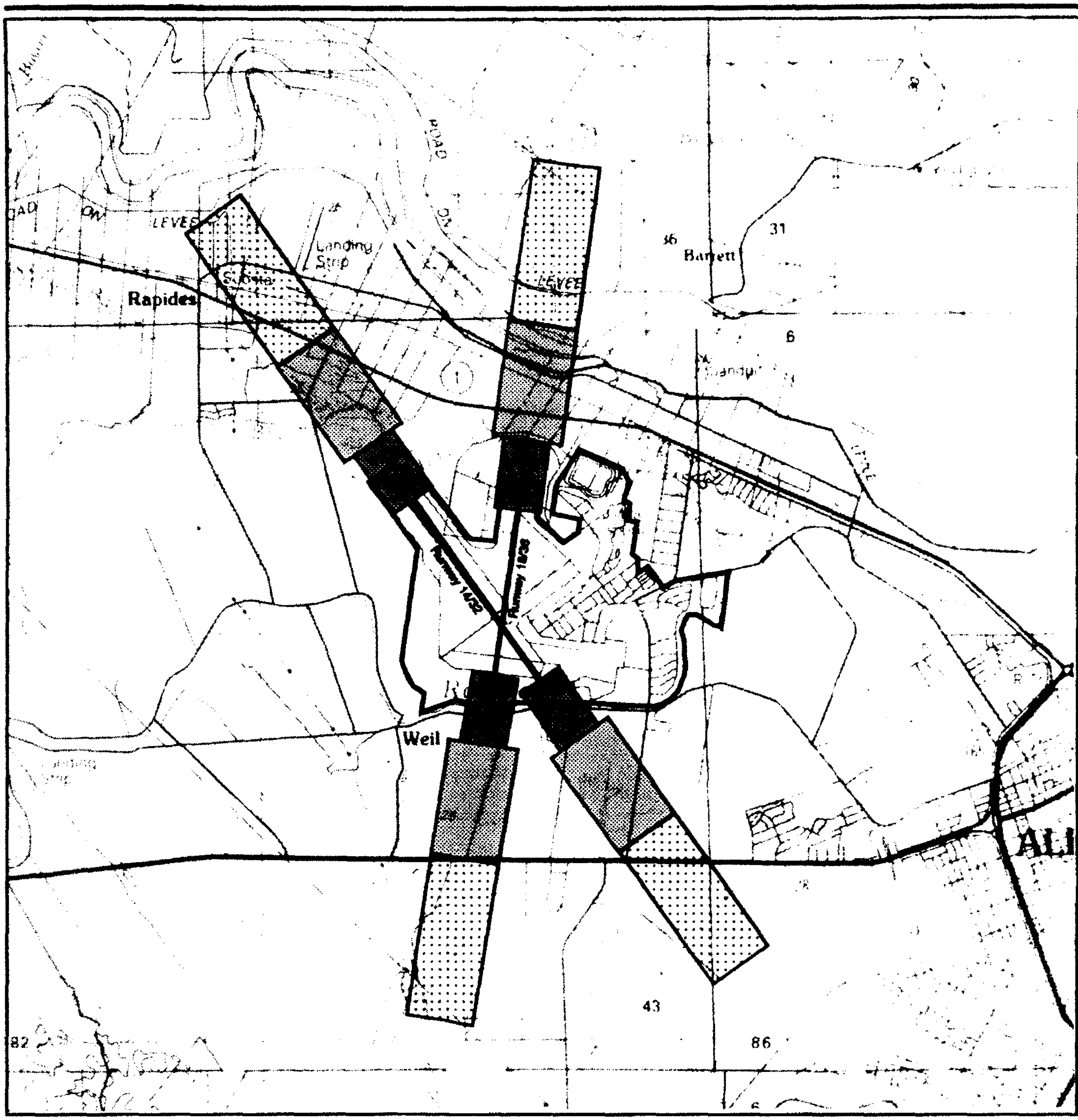
The Air Force recommends that no development occur in the clear zone. At England AFB, only agricultural land uses occur within the clear zones. Some types of industrial uses, and all agricultural, recreational, and vacant land uses, are compatible with APZ I, but residential and other high-density population land uses are discouraged. At England AFB, some single-family dwellings and one church are within APZ I at the southern end of the north/south runway. Low-density residential and low-intensity retail uses are compatible with APZ II, in addition to those uses listed for APZ I. There are about 20 single-family residences within APZ II at the north end of Runway 14/32.

The AICUZ program applies only to military airfields. Similar criteria are established by the FAA for civilian airports. After the closure of England AFB, FAA criteria will apply if airport activities are continued.

Land Use Plans and Regulations. The general plan for a jurisdiction represents the official position on long-range development and resource management. This position is expressed in goals, policies, plans, and actions regarding the physical, social, and economic environments, both now and in the long term. The State of Louisiana does not directly implement and administer land use regulations, but has vested parishes and cities with that authority through enabling legislation and statutes (Louisiana Revised Statute 2:381-390).

In May 1989, the Rapides Parish Police Jury (equivalent to a county board of commissioners or supervisors), the parish legislative body, adopted the *Airbase Landing Zone District Ordinance*. This ordinance was adopted, following the recommendations of the England AFB AICUZ study, to prevent incompatible land uses in areas surrounding the base and to protect the community and its property from mission-related hazards.

The City of Alexandria followed the parish's actions by enacting the *Airfield Compatibility (A-C) Zone* ordinance. This zoning ordinance is based on the parish ordinance and the AICUZ study recommendations. The ordinance identifies the clear zones and APZs at the ends of the primary and secondary runways.



EXPLANATION

Base Boundary

Clear Zone

Accident Potential Zone I

Accident Potential Zone II

0 ¼ ½ 1 MILES

Source: U.S. Air Force 1983.

England AFB Clear Zones and Accident Potential Zones

Figure 3.2-5

Land uses in the clear zones are restricted to transportation, communication, utilities, and agriculture. No residential structures are allowed in APZ I. In addition, business and commercial development density and heights are limited. Single-family homes comprise the largest number of nonconforming uses found in APZ I, northwest of Runway 14/32. These nonconforming uses existed prior to the adoption of the *Airbase Landing Zone District Ordinance*. In APZ II, two residential dwelling units per acre are allowed. As a result of the zoning ordinance, the number of nonconforming uses will not increase.

In April 1992, the City of Alexandria adopted *Alexandria 2010: A Comprehensive Development Strategy* (RM Plan Group 1992), which is a long-term development plan for the City of Alexandria. The land use pattern established by the plan is based on a maximum population of 95,000 and an employment base of 79,000. Both of these conditions are approximately double current conditions, but represent an optimum size for the community based on long-term economic growth potential, environmental constraints, and desired quality of life. It is recognized, however, that given current economic conditions in the region, the maximums will not be reached in the planning horizon (i.e., before 2010). The planning area (22,375 acres) presented in the plan includes the present City of Alexandria, England AFB, and contiguous unincorporated areas where the city is expected to grow and provide services. Currently, no intergovernmental agreements have been established to provide Alexandria extra-territorial provisions for zoning and building codes in these unincorporated areas of Rapides Parish.

The plan proposes reuse of England AFB for aviation-related activity with associated mixed uses, including distributive, light production/assembly, communications, training, research, and office uses. The plan projects that reuse of the base, along with completion of Interstate 49 and the Alexandria Port, will likely attract industrial and residential development to the unincorporated areas of the parish between the western portion of the city and England AFB.

The future land use component of the Alexandria 2010 plan designates recreational, medium- to high-density residential, and regional administrative, finance, entertainment, and communications uses north of the base; low-density residential, agricultural/open space, recreational, and regional administrative uses south of the base; and low-, medium-, and high-density residential uses east of the base. The area west of the base is not considered in the plan.

Zoning. Zoning divides a jurisdiction into districts within which the height, open space, building coverage, density, and type of future land uses are set forth. Zoning is designed to achieve various community development goals, including base reuse plans.

There are no zoning regulations for unincorporated areas of Rapides Parish, except for areas adjacent to the base affected by the *Airbase Landing Zone District Ordinance* previously discussed. The City of Alexandria has adopted zoning regulations; areas within the corporate limits of Alexandria adjacent to the base on both the north and south are zoned for residential and agricultural-residential, except for those areas considered under the *Airfield Compatibility (A-C) Zone*.

The City of Alexandria has 21 zoning districts. Two of these are overlay districts: a Floodway Hazard Zone and an A-C Zone. The base is exempt from the City of Alexandria zoning regulations. Adjacent land uses in the City of Alexandria and unincorporated areas of Rapides Parish are compatible with the AICUZ conclusions and recommendations, as described previously.

To implement the Alexandria 2010 plan, the city is in the process of adopting a unified Land Development Code, which condenses the city's existing codes related to zoning; subdivisions and site development; and streets, sidewalks, and other public places, into a single comprehensive regulation. The development code will establish various zoning districts and subdivision regulations for the city, and administrative procedures required for enforcement of the code. Variances, building permits, certificates of zoning compliance, appeals, fees, and enforcement will also be components of the revised code. The proposed *Land Development Code* maintains the existing *Airfield Compatibility (A-C)* zoning, but it is considered a site development condition rather than a specific zoning district. The existing regulations currently codified as the A-C district are incorporated into the site development portion of the development code, including the AICUZ-related terminology.

Closure Baseline. Land use conditions at the time of closure will remain basically unchanged. Military airfield operations will cease no later than the time of base closure, removing all land use conflicts and constraints associated with the AICUZ.

The local land use ordinances, *Airbase Landing Zone District Ordinance* and *Airfield Compatibility (A-C) Zone*, establish land use compatibility with an airport-related land use. If necessary, they could be amended to specifically address the issue of a commercial or general aviation airport.

3.2.2.2 Aesthetics

Visual resources include natural and man-made features that give a particular environment its aesthetic qualities. Criteria used in the analysis of these resources include visual sensitivity, which is the degree of public interest in a visual resource, and concern over adverse changes in its quality. Visual sensitivity is categorized in terms of high, medium, or low levels.

High visual sensitivity exists in areas where views are rare, unique, or in other ways special, such as in remote or pristine environments. High-sensitivity views would include landscapes that have landforms, vegetative patterns, water bodies, or rock formations of unusual or outstanding quality.

Medium visual sensitivity areas are more developed than those of high sensitivity. Human influence is more apparent in these areas and the presence of motorized vehicles and other evidence of modern civilization is commonplace. These landscapes generally have features containing varieties in form, line, color, and texture, but tend to be more common than high visual sensitivity areas.

Low visual sensitivity areas tend to have minimal landscape features, with little change in form, line, color, and texture.

Areas of the base adjacent to unincorporated areas of Rapides Parish are surrounded by agricultural or open space lands; these areas provide a low level of visual sensitivity. Most of the base is surrounded by agricultural land, except for areas along the eastern boundary, which consist of single-family housing and numerous trailer parks. This portion of the base has a low level of visual sensitivity. No areas are considered to have a high level of visual sensitivity. Because of the mild climate and long growing season, a wide variety of vegetation is successful in providing shade, screening, and beautification.

England AFB has adopted guidelines to ensure that architectural elements and natural resources are compatible. These guidelines stress an open, natural environment that is functional for the base's mission as well as being visually pleasing. Natural resources, such as native vegetation, are incorporated into landscape planning and are compatible with the bayou region surrounding the base.

3.2.3 Transportation

The ROI for transportation includes the principal road, air, and rail networks in Rapides Parish. The analysis focuses on the segments of the transportation networks in the region that serve as direct or necessary indirect linkages to England AFB, and those that are commonly used by personnel employed at the base.

3.2.3.1 Roadways

The evaluation of the existing streets and highways in the region focuses on capacity analysis, a set of procedures used to estimate the traffic-carrying ability of a street or highway. Capacity analysis depends on the physical features of a roadway, such as lane width, number of lanes, intersection control, and the volume and speed of traffic. Operational criteria are defined using levels of service (LOS). Ranges of operating conditions are defined for each type of facility and are related to the amount of traffic that can be accommodated at each level. LOS is a qualitative measure describing operational conditions within a traffic stream, and the condition's perception by motorists and/or passengers. An LOS definition generally describes these conditions in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. LOS is defined in terms of levels A through F, with LOS A representing the best operating conditions and LOS F the worst. LOS letter designations are described in Table 3.2-1.

Table 3.2-1

Road Transportation Levels of Service

LOS	Description	Criteria (Volume-to-Capacity) Freeway	4-Lane Arterial	2-Lane Highway
A	Free flow with users unaffected by presence of other users of roadway.	0-0.35	0-0.28	0-0.10
B	Stable flow, but presence of users in traffic stream becomes noticeable.	0.36-0.54	0.29-0.45	0.11-0.23
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream.	0.55-0.77	0.46-0.60	0.24-0.39
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor level of comfort and convenience.	0.78-0.93	0.61-0.76	0.40-0.57
E	Unstable flow; operating conditions at capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience.	0.94-1.00	0.77-1.00	0.58-0.94
F	Forced or breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic.	>1.00	>1.00	>0.94

Source: Transportation Research Board 1985.

LOS is defined based on one or more operational parameters that best describe the operating quality of each facility. Parameters selected to define the LOS are called measures of effectiveness and represent those available measures that best describe the quality of operation on each facility type. Table 3.2-2 presents the measures of effectiveness used to define the LOS for each facility type.

Table 3.2-2

Measures of Effectiveness for Levels of Service

Type of Facility	Measure of Effectiveness
Freeways	Density, passenger cars per mile per lane
Multi-Lane Highways	Density, passenger cars per mile per lane
Two-Lane Highways	Percent time delay, average travel speed
Signalized Intersections	Average individual stopped delay
Unsignalized Intersections	Reserve capacity passenger cars per hour
Arterials	Average travel speed

LOS is often defined by secondary measures, the most common being a range of volume-to-capacity ratios. The values are useful indicators in determining the extent to which the roadway segment is used and in assessing the potential for congestion and other problems.

Traffic flow conditions usually are most congested during morning and evening peak hours, and depend on the type of roadway, the physical characteristics of the roadway, traffic volumes, and the vehicular mix of traffic. Travel on two-lane rural highways is affected substantially by traffic in the opposing lane, and by curves and hills, all of which impair a motorist's ability to safely pass.

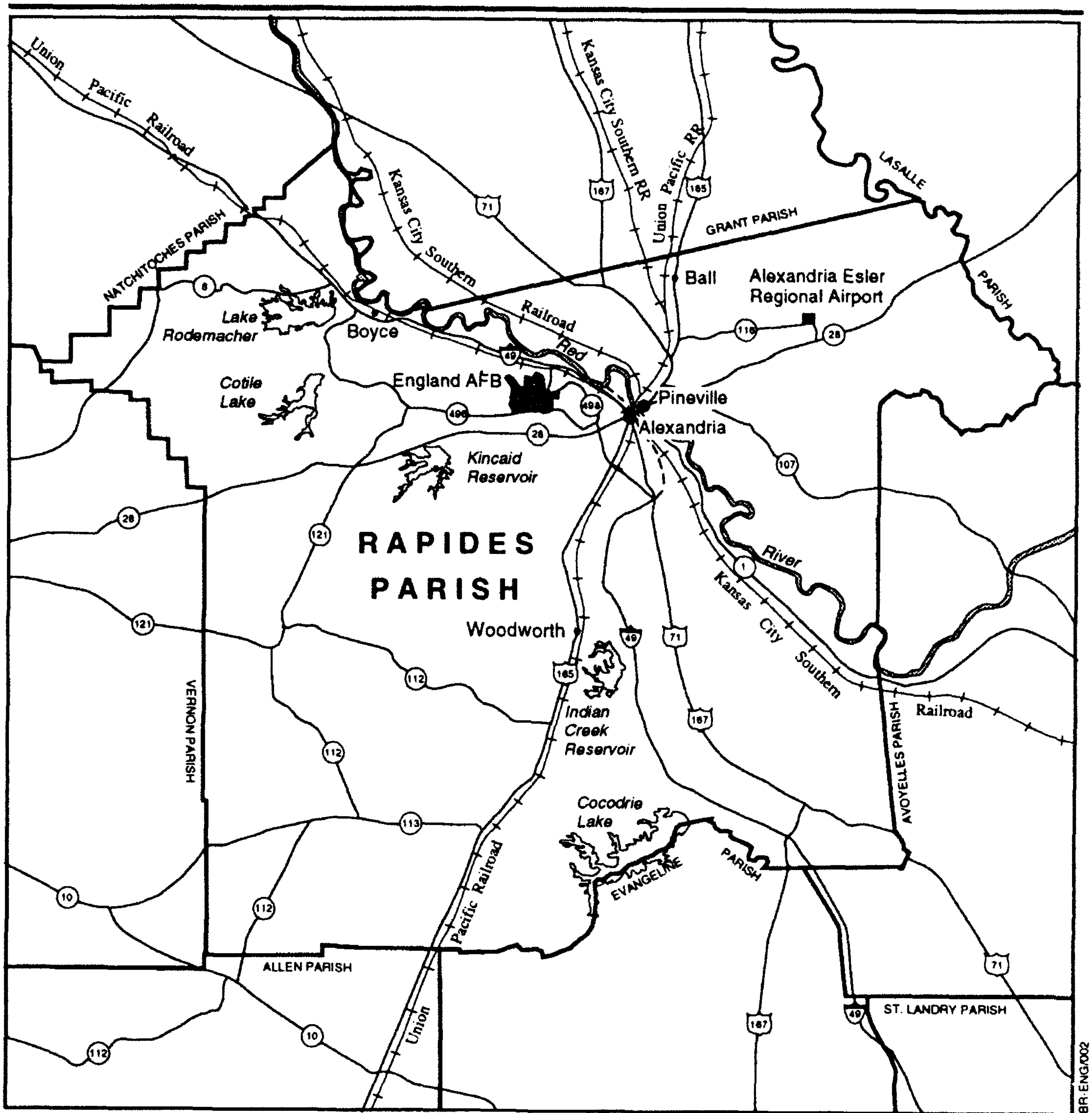
By contrast, each lane of an interstate highway (divided, with restricted access) provides a wide range of conditions and is less influenced by opposing traffic, curves, and hills. In urban or suburban settings, the capacity of signalized intersections that restrict traffic flow influences LOS more than the capacity of a roadway segment. LOS ratings presented in the remainder of this section are determined by application of appropriate operational and planning analyses of the *Highway Capacity Manual Special Report 209* (Transportation Research Board 1985).

Existing roads and highways within the ROI are described at three levels: (1) regional, representing the major links within Rapides Parish; (2) local, representing key community roads; and (3) onbase roads.

The regional transportation system is shown on Figure 3.2-6. Key roads in the ROI include Interstate 49 and U.S. 71, 165, and 167. The urban segment of Interstate 49 through Alexandria is under construction north and east of the base, but will not be completed until 1996. When completed, it will provide uninterrupted interstate highway travel between Shreveport and Lafayette.

Key roads that provide access to England AFB are State Highway 1 (North Bolton Avenue), State Highway 28 (Gardner Highway/Coliseum Boulevard), State Highway 496 (Bayou Rapides Road), and State Highway 498 (England Drive) (Figure 3.2-7). The Louisiana Department of Transportation and Development (1990) has recorded traffic counts on five road segments in the vicinity of the base.

State Highway 1, a principal arterial, is a four-lane divided highway (12-foot-wide lanes) east of Airbase Road and a two-lane undivided highway west of Airbase Road. In 1990, the average daily traffic (ADT) was approximately 15,220 vehicles east of Airbase Road and 11,150 vehicles west of Airbase Road. This road operates at LOS A and C, respectively, with a maximum speed limit of 55 miles per hour (mph). State Highway 28 is a principal arterial and is a four-lane divided highway (12-foot-wide lanes) east of Vandenberg Drive and a two-lane undivided highway west of Vandenberg Drive. In 1990, the ADT was about 4,535 vehicles west of Vandenberg Drive and 15,020 vehicles east of Vandenberg Drive. This road operates at LOS A with a maximum speed limit ranging from 35 to 55 mph.



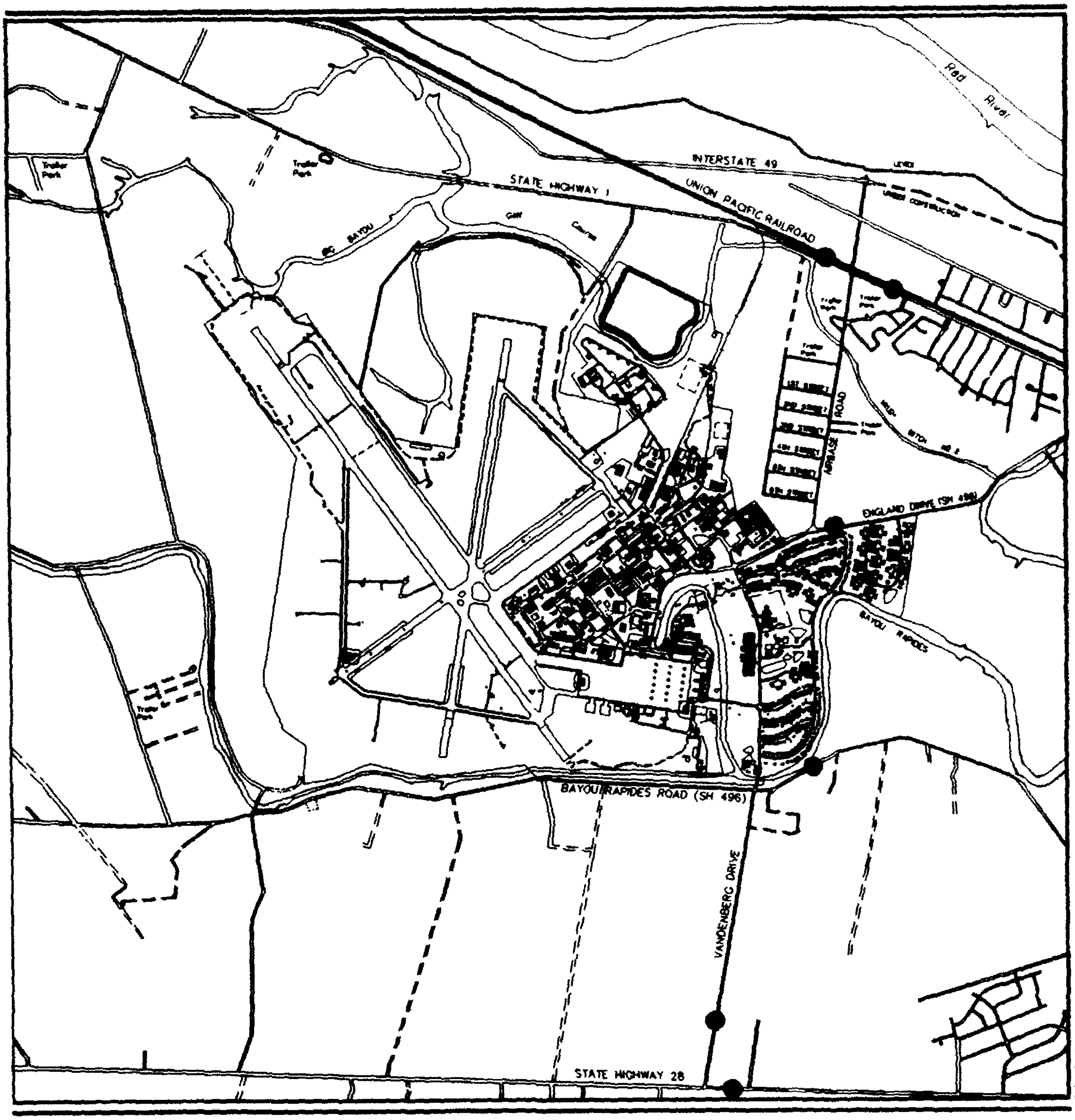
EXPLANATION

- Interstate Highway
- U.S. Highway
- State Highway
- Parish Boundary
- Railroad
- Highway Under Construction

0 2 4 10 MILES

Regional Transportation System

Figure 3.2-6



EXPLANATION

● Traffic Count Point

0 500 1000 2000 FEET

Transportation System in the Vicinity of England AFB

Figure 3.2-7

State Highway 496 is a collector/minor arterial with two 10-foot-wide lanes. The 1990 ADT was approximately 3,100 vehicles east of Vandenberg Drive. This road operates at LOS A, with a maximum speed limit ranging from 35 to 55 mph. State Highway 498 is a minor arterial with two 10-foot-wide lanes. The 1990 ADT was 3,875 vehicles east of Airbase Road. This road operates at LOS A, with a maximum speed limit ranging from 25 to 35 mph.

The main roadways on England AFB are Vandenberg Drive, Billy Mitchell Boulevard, Frank Andrews Boulevard, Oliver Drive, and Chappie James Avenue (Figure 3.2-8). All of these roads have two lanes.

Vandenberg Drive provides access to the eastern portion of the base via the Back (Cape) Gate, extending north from State Highway 28. Billy Mitchell Boulevard, in the western portion of the developed area of the base, provides access to the various airfield facilities located along the flightline to the south and west. Frank Andrews Boulevard, with a northeast/southwest orientation, extends through the middle of the developed area. Oliver Drive, which has a northeastern orientation, provides access to the developed areas of the base via the Main Gate. Chappie James Avenue, with a northwest orientation, provides access to the northern portion of the Main Base area and intersects both Frank Andrews Boulevard and Oliver Drive.

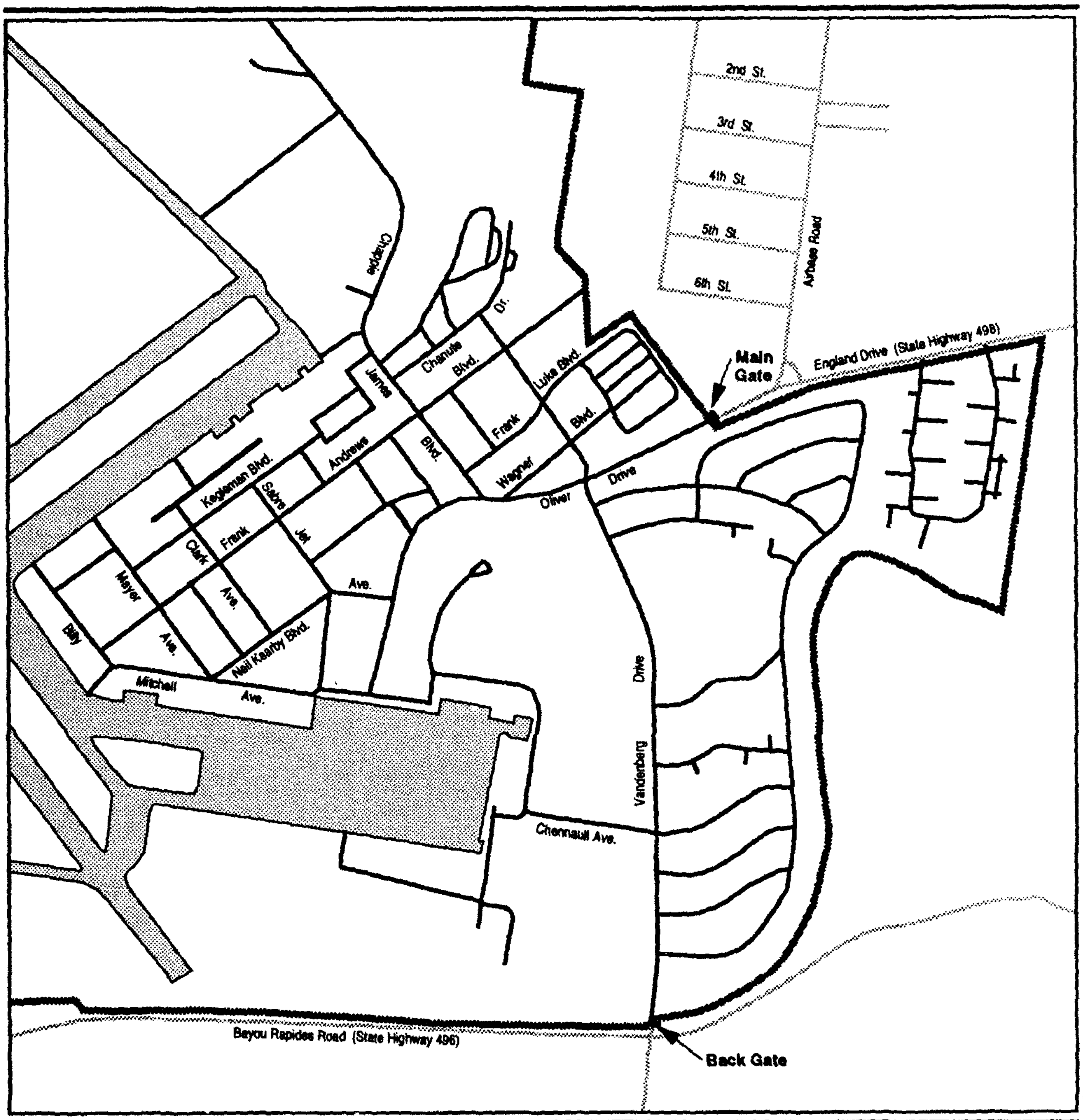
Preclosure Reference. Traffic volumes on key roads before closure of the base are shown on Figure 3.2-9. Local roads are at LOS A, with the exception of State Highway 28 east of Vandenberg Drive, which operates at LOS C.

Closure Baseline. Base closure will cause a decrease in traffic volumes on all roads in the vicinity of or on the base. Airbase Road, which provides access to State Highway 1 to the north, is projected to experience a 40-percent reduction in ADT. State Highway 1, east of Airbase Road, is projected to experience a 39-percent decrease in ADT. This road currently operates at LOS A, and will maintain that level with closure. State Highway 498 will also experience a 12-percent decrease in ADT and the LOS level of A will remain unchanged.

Vandenberg Drive, which provides access to State Highways 28 and 496, is projected to have a 39-percent decrease in ADT. State Highway 28 west of Vandenberg Drive will experience a 13-percent decrease in ADT and the current LOS A will remain unchanged. State Highway 28 east of Vandenberg Drive will experience a 40-percent decrease in ADT. The LOS of this road should improve to A when the base closes. State Highway 496 east of Vandenberg Drive will have a 13-percent decrease in ADT. This road will also maintain LOS A.

3.2.3.2 Airspace/Air Traffic

Airspace is a finite resource that can be defined vertically and horizontally, as well as temporally, when describing its use for aviation purposes. As such, it must be managed and utilized in a manner that best serves the competing



EXPLANATION

Base Boundary

Onbase Road

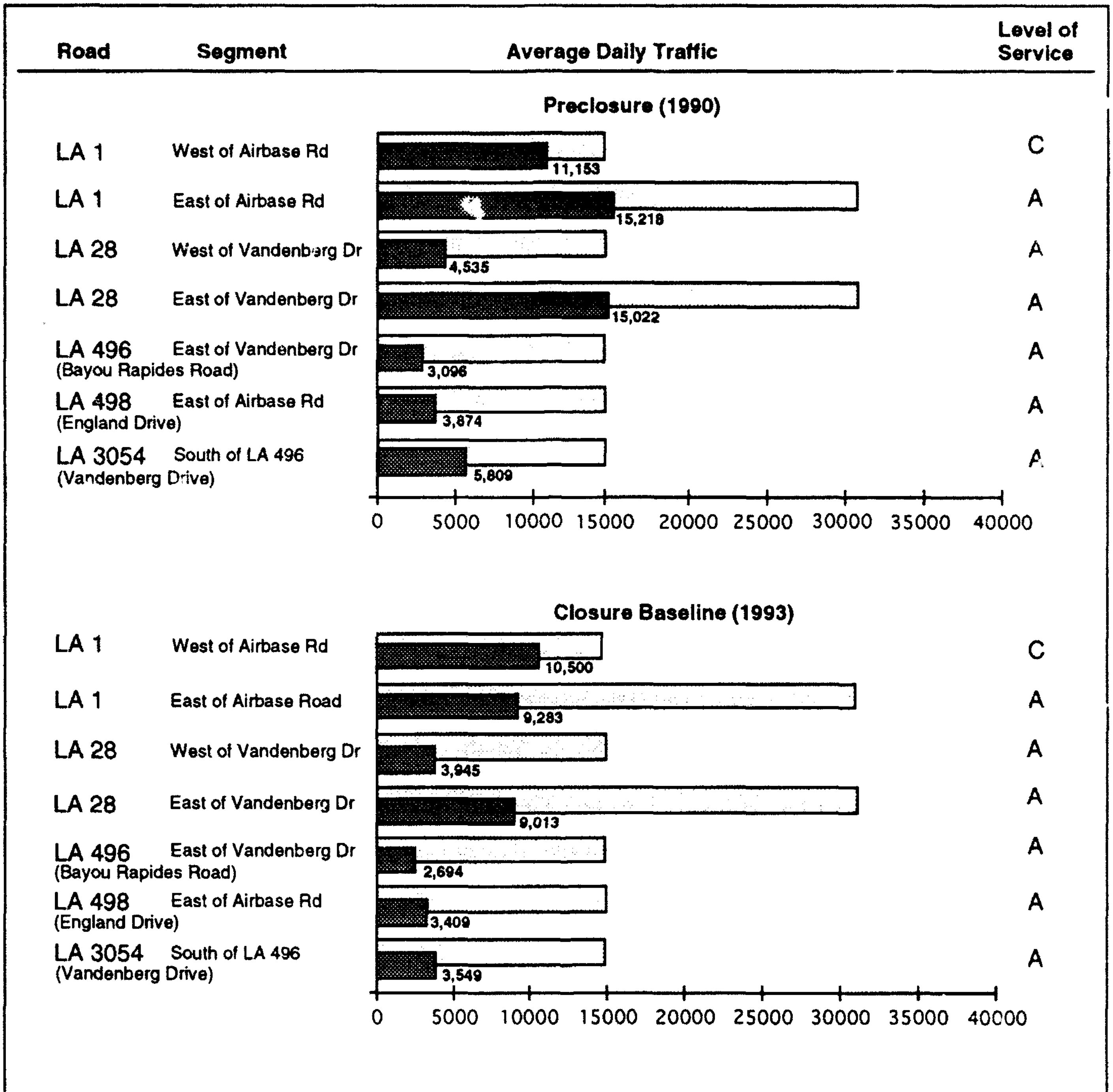
Offbase Road

Runway / Taxiway / Apron

0 250 500 1000 FEET

England AFB Road System

Figure 3.2-8



Source: Louisiana Department of Transportation and Development 1990.

8R-ENG/004

EXPLANATION

Daily Traffic Volume (passenger cars per day)

Daily Traffic Capacity (passenger cars per day)

Traffic Volumes on Key Roads in the Vicinity of England AFB

Figure 3.2-9

needs of commercial, general, and military aviation interests. The FAA is responsible for the overall management of airspace and has established different airspace designations that are designed to protect aircraft while operating to or from an airport, transiting enroute between airports, or operating within "special use" areas identified for defense-related purposes. Each type of airspace is defined in Appendix A, Glossary of Terms and Acronyms/Abbreviations.

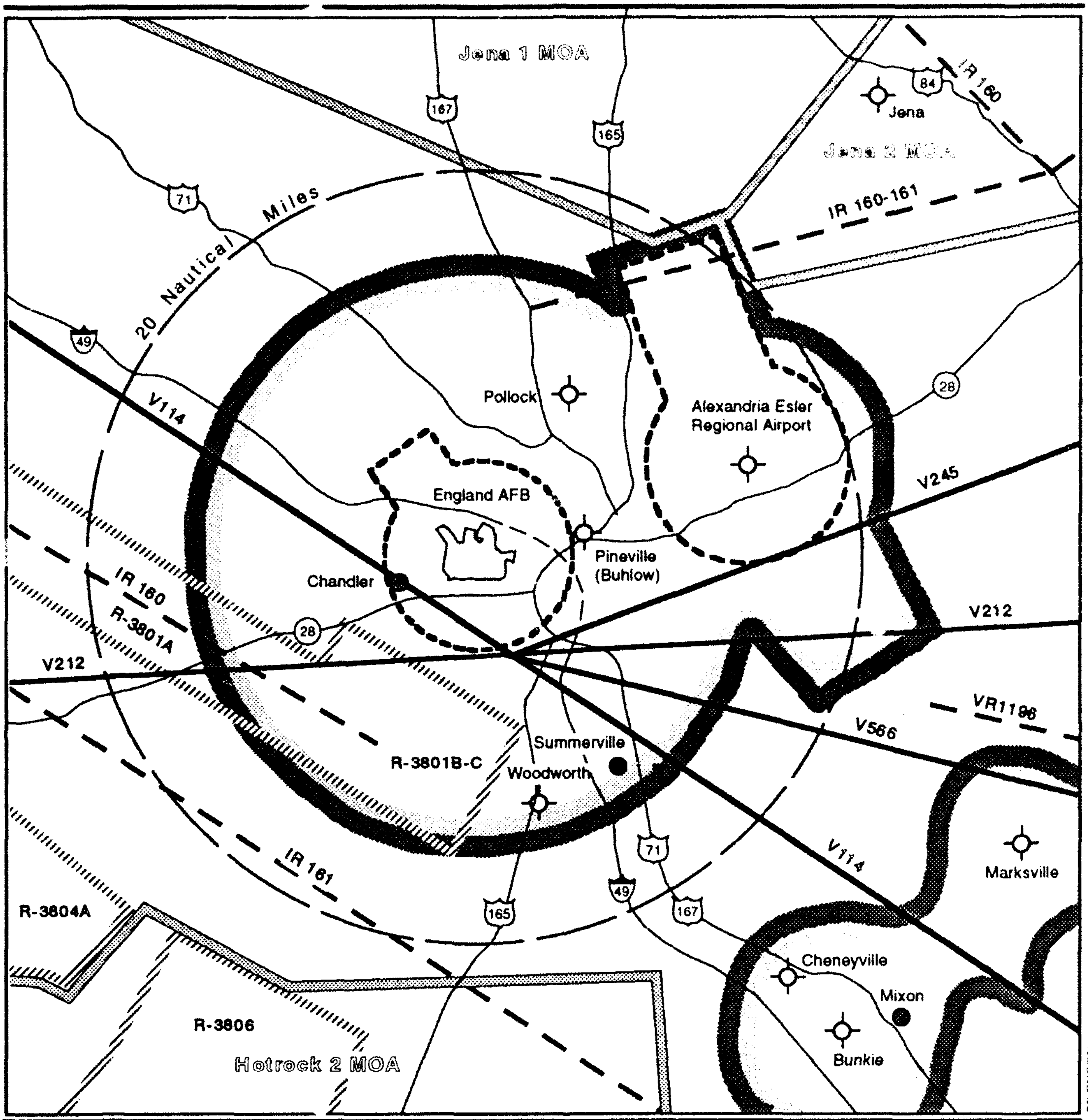
Rules of flight and air traffic control (ATC) procedures have been established to govern how aircraft must operate within each type of designated airspace. All aircraft operate under either instrument flight rules (IFR) or visual flight rules (VFR).

The type and dimension of individual airspace areas established within a given region and their spatial and procedural relationship to each other is contingent on the different aviation activities conducted in that region. When any significant change is planned for a region, such as an airport expansion or a new military flight mission, the FAA will reassess the airspace configuration to determine if such changes will adversely affect (1) ATC systems and/or facilities; (2) movement of other air traffic in the area; or (3) airspace already designated and used for other purposes (i.e., Military Operating Areas [MOAs] or restricted areas). Therefore, considering the limited availability of airspace for air traffic purposes, a given region may or may not be able to accommodate any significant airport or airspace area expansion plans.

Preclosure Reference. An understanding of the ROI airspace/air traffic environment and its use under the preclosure reference is necessary to help determine its capability and capacity to assimilate future aviation activities into the National Airspace System (NAS). The same constraints and considerations, such as terrain, runway alignment, and other air traffic flows, would apply under alternate aviation uses at England AFB.

ATC for military and civil aircraft operating in the vicinity of England AFB is provided by Alexandria Approach Control and the Houston Air Route Traffic Control Center (ARTCC). Alexandria Approach Control is an Air Force-operated facility at England AFB that provides radar coverage for all aircraft from the surface to 10,000 feet MSL for a radius of 60 miles, excluding certain Special Use Airspace areas. Air traffic above 10,000 feet MSL is controlled by Houston ARTCC. The airspace ROI is defined as the 20-nautical-mile area surrounding England AFB and includes Alexandria Esler Regional Airport and several smaller airports (Figure 3.2-10).

England AFB is a dedicated military installation and commercial and general aviation aircraft are not permitted to land at the base except in emergency situations. England AFB has two active runways: Runway 14/32 is 9,350 feet long and 150 feet wide with a northwest/southeast orientation, and Runway 18/36 is 7,000 feet long and 150 feet wide with a north/south orientation. Runway 14/32 is used for approximately 90 percent of England AFB air operations. Total aircraft operations in 1991 at England AFB were 42,314,



EXPLANATION

- U.S. Highway
- State Highway
- Civil Airport
- Private Airport
- Military Training Route
- Low Altitude Federal Airway
- Transition Area (Floor at 700' Above Ground Level)
- Transition Area (Floor at 1200' Above Ground Level)
- Control Zone
- Restricted Area
- MOA Boundary

0 2 4 8 MILES

Source: NOAA 1992.

Airspace Region of Influence (20 Nautical Miles)

Figure 3.2-10

including 36,400 *operations* (18,200 *sorties*) by England AFB-based A-10 aircraft and 5,914 transient operations (Table 3.2-3).

Table 3.2-3

England AFB Aircraft Operations[1], 1991

Assignment	Type	Total
Aircraft Based at England AFB	A-10	36,400
Transient	A-4	102
Transient	A-10	820
Transient	C-9	246
Transient	F-16	248
Transient	F-18	168
Transient	T-2	210
Transient	T-37	952
Transient	T-38	1,620
Transient	UH-1	250
Transient	Other Transient[2]	1,298
TOTAL:		**42,314**

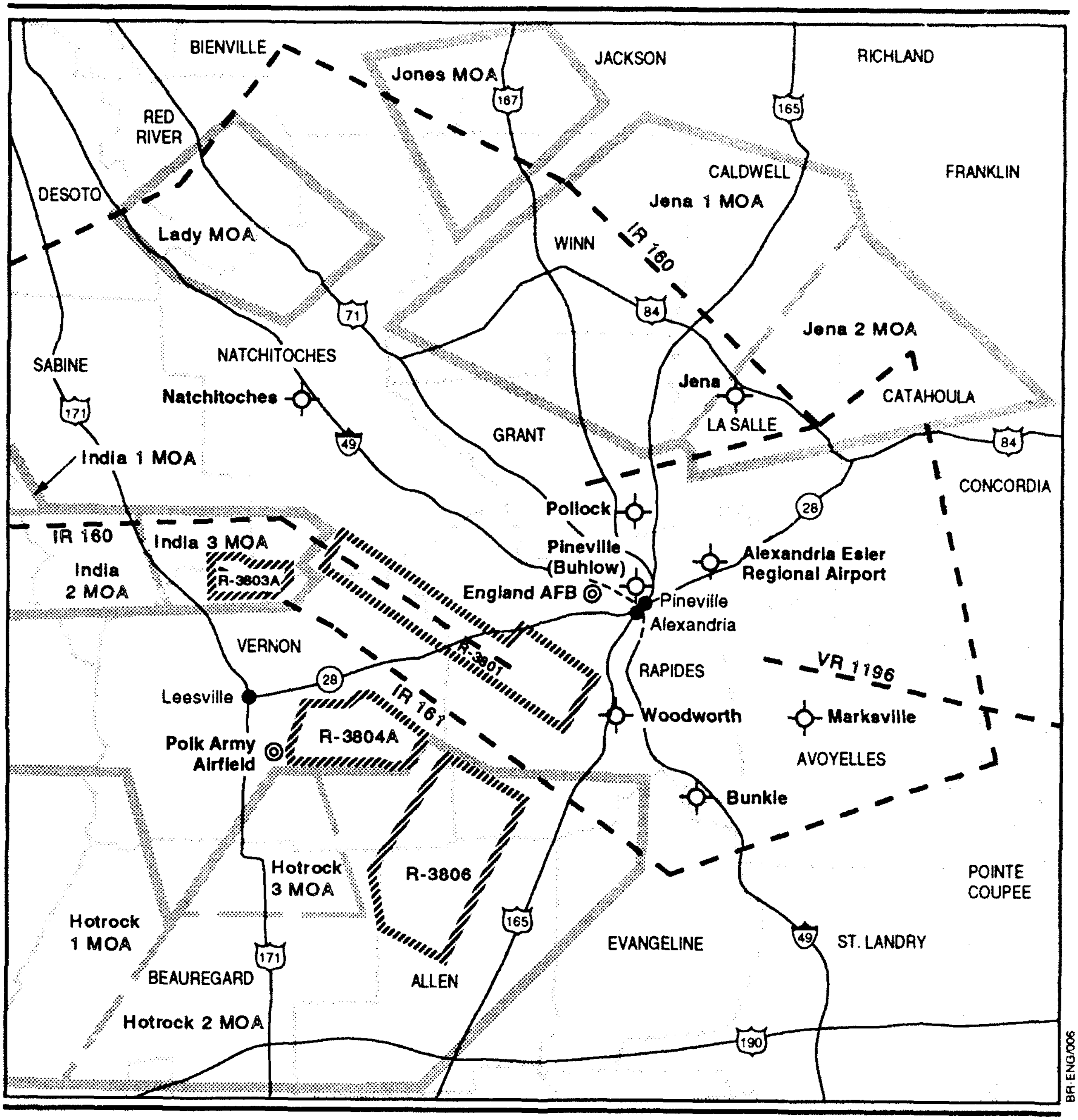
Notes: [1]*An aircraft operation is one takeoff or one landing.*
[2]Aircraft with less than 100 operations each.

Sources: U.S. Air Force 1991a, 1992a.

England AFB is surrounded by Special Use Airspace and Military Training Routes which are designated for military training activities. The base is responsible for scheduling airspace activity in three Restricted Areas (R-3801A, R-3801B-C [Claiborne Range], and R-3806), three MOAs (Jena, Hotrock, and India), and two Military Training Routes (IR-160 and IR-161). Aircraft from England AFB, Barksdale AFB, and the New Orleans Air Force Reserve (926th Tactical Fighter Group) use these areas for training activities. Special Use Airspace and Military Training Routes scheduled by England AFB and used by the 23rd TFW are shown on Figure 3.2-11. The Lady MOA is scheduled by Barksdale AFB. Principal arriving, departing, and closed-loop aircraft flight tracks for England AFB are shown on Figure 3.2-12.

Closure Baseline. The closure of England AFB would reduce military operations in the vicinity of the base by more than 42,000 operations annually. Closure of the base would also require transfer of ATC responsibility to the FAA.

With the closure of England AFB, all of the MOAs and Restricted Areas *currently scheduled by England AFB, except for the Jena MOA, will be* reassigned to the Joint Readiness Training Center at Fort Polk. The Jena MOA will be reassigned to the 917th TFW (Reserve) at Barksdale AFB. A proposal to revise the existing MOAs and Restricted Areas has been submitted to the FAA (U.S. Army 1992). The proposal includes revisions to the existing



EXPLANATION

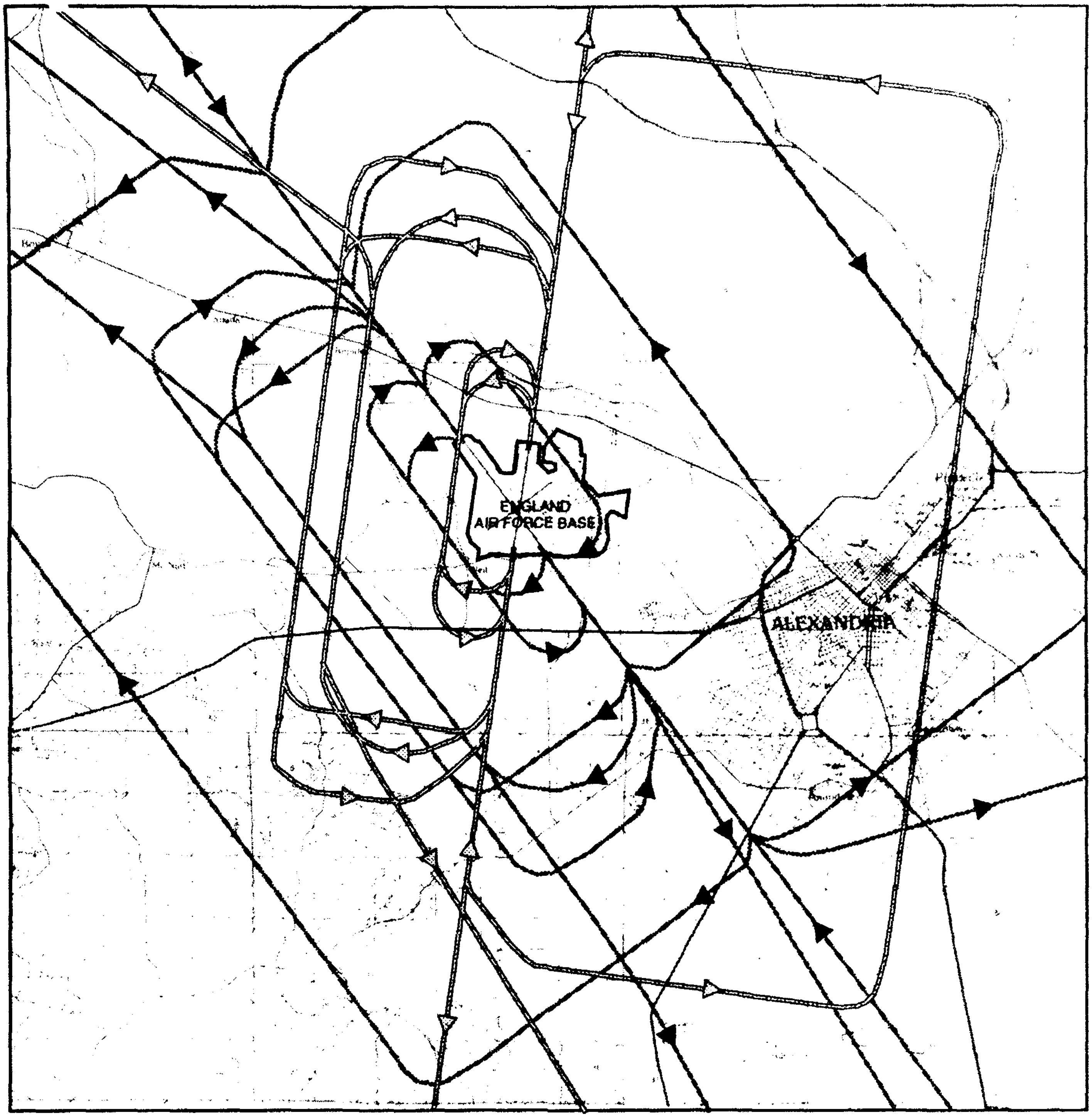
- U.S. Highways
- State Highways
- Civil Airports
- Military Airports
- City
- Parish Boundary
- Military Training Routes
- Military Operating Areas
- Restricted Areas

0 5 10 15 MILES

Source: NOAA 1992.

Existing Special Use Airspace and Military Training Routes

Figure 3.2-11



EXPLANATION

Runway 14/32
Runway 18/36

Direction of Travel on Flight Track
(Arrival, Departure, and Closed Loop)

0 1 2 3 MILES

Source: U.S. Air Force 1983.

England AFB Aircraft Flight Tracks

Figure 3.2-12

Hotrock and India MOAs. The MOAs will be reconfigured and renamed as Warrior 1, Warrior 2, Warrior 3, Warrior 4, and Warrior 5 (Figure 3.2-13). R-3806 will no longer be required and will be returned to the NAS. Scheduling responsibility for the two Military Training Routes will be transferred to Fort Polk.

3.2.3.3 Air Transportation

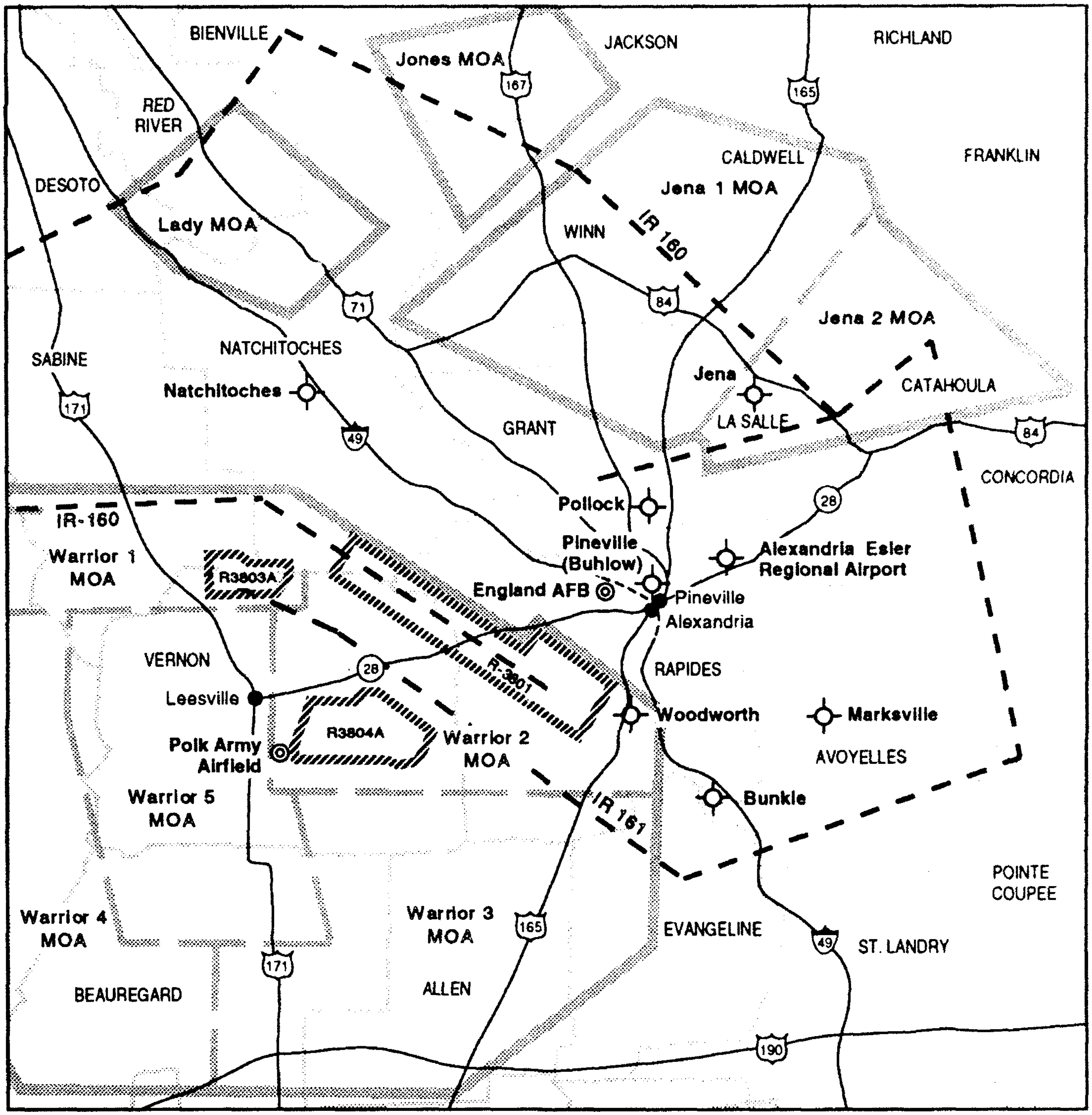
Air transportation includes passenger travel by commercial airline and charter flights, business and recreational travel by private (general) aviation, and priority package and freight delivery by commercial air carriers.

Preclosure Reference. The principal commercial airport serving the central Louisiana region is Alexandria Esler Regional Airport, approximately 13 miles northeast of Alexandria. Alexandria Esler Regional Airport was originally established as a three-runway military base and, during World War II, was a part of Camp Livingston. The airfield was transferred to Rapides Parish in 1957. Following the transfer, the Rapides Parish Police Jury became responsible for the operation of the airfield as a civil airport. Currently, the airport has two runways. Runway 8/26 is 150 feet wide and 5,999 feet long with an east/west orientation. Runway 14/32 is 150 feet wide and 5,601 feet long with a northwest/southeast orientation. The apron area covers approximately 200,000 square feet.

The airport was designed to handle DC-9 and Boeing 727 aircraft, but since deregulation of the airlines in the early 1980s, the airport has been primarily used for commuter and general aviation aircraft. Prior to 1985, commercial jet service by certified air carriers was available, but following deregulation, was replaced entirely with commuter airline service. Given current passenger levels, commercial jet service is not expected to be reinstated in the near future.

Annual operations for 1985 to 1991 at Alexandria Esler Regional Airport are summarized in Table 3.2-4. A comparison of actual 1990 operations and those projected in the *Master Plan Update 2010, Alexandria Esler Regional Airport* (Berger, Barnard & Thomas, Inc. 1990) indicates that current operations are much lower than were projected in the 1990 study. Operations in 1990 were projected to be 33,280 general aviation (20,800 itinerant and 12,480 local), 11,067 commercial airline, and 15,000 military, which included approximately one-third Louisiana National Guard helicopter operations. However, these projections were based on an estimated population of 157,700 for Rapides and Grant parishes in 1990 (actual was 148,812) and 178,865 in 2010.

Four commuter airlines currently provide service to Alexandria Esler Regional Airport: American Eagle, Atlantic Southeast (ASA) (Delta Connection), Continental Express, and Northwest Airlink. These airlines provide an average of 16 daily roundtrip flights from Houston (Continental Express), Memphis (Northwest Airlink), and Dallas (American Eagle and ASA) to Alexandria. Two airlines which primarily provided intrastate service, Royale and L'Express, no longer provide service to the airport, but are included in the airport operations



EXPLANATION

U.S. Highways
State Highways
Civil Airports
Military Airports
City
Parish Boundary
Military Training Routes
Military Operating Areas
Restricted Areas

0 5 10 15 MILES

Proposed Special Use Airspace and Military Training Routes

Source: NOAA 1992 and U.S. Army 1992.

Figure 3.2-13

totals in Table 3.2-4. Royale discontinued service in 1988 and L'Express in February 1992. Both airlines went out of business. L'Express is included in the historic and projected operations data; Royale Airlines is included in the pre-1989 operations data.

Table 3.2-4

Annual Operations at Alexandria Esler Regional Airport, 1985-1991

Year	General Aviation Itinerant	General Aviation Local	Commuter Airline	Military	Total
1985	20,042	10,086	11,184	2,250	43,562
1986	18,220	9,554	13,384	4,378	45,536
1987	16,755	10,913	13,614	10,626	51,908
1988	16,556	10,080	13,470	11,502	51,608
1989	15,585	9,370	10,624	9,256	44,835
1990	14,250	6,695	12,464	9,716	43,125
1991	14,394	7,705	11,293	5,353	38,745

Sources: Berger, Barnard & Thomas, Inc. 1990; Rapides Parish Airport Authority 1990, 1991.

Enplanement/deplanement (i.e., a passenger boarding/departing a commercial aircraft) data for Alexandria Esler Regional Airport from 1985 to 1991 are summarized in Table 3.2-5. The airport had approximately 68,875 passenger enplanements in 1991, a 1-percent decrease from 1990, when the airport had about 69,465 enplanements. Passenger enplanements reached a peak of 80,100 in 1979, but decreased substantially following deregulation of the airlines and the termination of air carrier (i.e., jet) service to the airport, reaching a low of approximately 37,940 in 1985.

Table 3.2-5

Passenger Enplanements and Deplanements for Alexandria Esler Regional Airport 1985-1991

Year	Enplanements	Deplanements
1985	37,938	38,981
1986	46,185	46,853
1987	46,066	48,189
1988	54,647	55,755
1989	60,983	62,809
1990	69,463	70,825
1991	68,873	70,873

Sources: Berger, Barnard & Thomas, Inc. 1990; Rapides Parish Airport Authority 1990, 1991.

Ticketed passengers booked by the Scheduled Airlines Traffic Office (SATO) at England AFB totaled approximately 5,100 in 1989, 3,155 in 1990, and 3,860 in 1991. Of these, approximately 3,190, 2,295, and 2,690 of the ticketed passengers, respectively, were on military travel orders (Scheduled Airlines Traffic Office 1992). The remainder of the tickets issued were for personal travel. The decrease in travel on military orders in 1990 and 1991 was primarily attributable to Operation Desert Storm. SATO-ticketed travel accounted for 8.4, 4.5, and 5.6 percent in 1989, 1990, and 1991, respectively, of the total enplanements at Alexandria Esler Regional Airport. Additional enplanements were also likely generated by England AFB personnel and their families for travel not ticketed by SATO; however, no estimate of the total number of enplanements is available.

Commuter airline operations decreased by approximately 15 percent between 1986 and 1991. The decrease is attributable to the use of larger airplanes (resulting in fewer flights) and the discontinuation of service by Royale in 1988. Commuter airline operations were projected in the master plan to increase to approximately 16,800 annual operations by the year 2010. However, these operations forecasts are based on a projected population increase of 15 percent, which does not take into account the closure of England AFB and realignment of Fort Polk (see Section 2.5.1). The master plan projections include passenger activity generated by personnel at England AFB and Fort Polk.

In 1990 and 1991, itinerant and local general aviation operations accounted for approximately 49 and 56 percent of the total airport operations, respectively. Local general aviation operations decreased by approximately 30 percent between 1987 and 1991. In this same time period, the number of general aviation aircraft based at the airport decreased from 60 to less than 40. General aviation operations were projected in the airport master plan to exceed 36,000 operations by 2000 and 39,000 operations by 2010. However, these projections are based on the number of aircraft increasing to 70 by 2000 and 83 by 2010. In addition to the general aviation aircraft, the U.S. Immigration and Naturalization Service maintains a three-aircraft operation out of the airport.

Military operations primarily consist of helicopters associated with Louisiana National Guard activities at adjacent Camp Beauregard, itinerant military aircraft stopping for government contract refueling, and A-10 aircraft from England AFB using the airfield to practice approaches. The number of military operations decreased in 1991 as a result of a reduction in flying activity by England AFB-based A-10s associated with Operation Desert Storm and a general decrease in flying associated with base closure. Approximately 80 to 90 percent of the military operations are associated with A-10 aircraft from England AFB (J. Sherrill, personal communication, 1992). Projected military operations in the 1990 master plan (15,000 annually through 2010) were based on continued operations at England AFB (i.e., use of the airport for approaches) and the relocation of a Louisiana National Guard helicopter unit to the airport, which has not occurred.

Air cargo processed at the airport in 1991 was 54.5 tons, 15 percent more than the 46.4 tons processed in 1990. Air cargo in 1991 consisted of approximately 5 tons of mail, 9 tons of express cargo, and 40.5 tons of freight. However, the amount of air cargo processed at Alexandria Esler Regional Airport decreased significantly following the termination of air carrier service to the airport, decreasing from a peak of 397.5 tons in 1983 to a low of 32 tons in 1989.

The closest airport to Alexandria Esler Regional Airport is Buhlow Airport in Pineville, a small general aviation airport with a 3,000-foot-long, 75-foot-wide runway. There are 36 based aircraft and approximately 5 transient aircraft operations weekly. Buhlow Airport does not have an air traffic control tower and no documented annual operations data are available. Other airports in the central Louisiana region are located in Marksville, Bunkie, Natchitoches, Jena, Pollock, Summerville, and Woodworth (Figures 3.2-10 and 3.2-11). Each of these airports has general aviation facilities.

Closure Baseline. The closure of England AFB would not have a significant effect on air transportation in the ROI. Base-associated activity accounted for less than 10 percent of the 1991 enplanements at Alexandria Esler Regional Airport. The closure of the base would result in a decrease in the number of enplanements, but this decrease would account for only about 11 less enplanements per day and would not likely reduce the number of daily commuter airline operations. Base closure would reduce the number of military operations at Alexandria Esler Regional Airport by 80 to 90 percent and total operations by approximately 15 percent.

3.2.3.4 Railroads

Railroad freight service is provided in the ROI by the Union Pacific and Kansas City Southern railroads. A Union Pacific Railroad line is located north of the base parallel to the Interstate 49/State Highway 1 corridor. Kansas City Southern tracks are located north of the Red River and have a north/south route that passes directly through the central portion of Alexandria. England AFB has a spur that connects to Union Pacific Railroad tracks to the north. This spur was used primarily for transporting JP-4 in tanker cars for transfer to the large aboveground fuel tanks located in the POL storage area in the northeast portion of the base.

There is no passenger rail service in the Alexandria/Pineville area. The closest passenger rail service, AMTRAK, is available approximately 80 miles south in Lafayette.

3.2.4 Utilities

The utility systems addressed in this analysis include the facilities and infrastructure used for:

- Potable water pumping, treatment, storage, and distribution;

- Wastewater collection and treatment;
- Solid waste collection and disposal; and
- Energy generation and distribution, including the provision of electricity and natural gas.

The ROI for utilities consists of the service areas of each utility provider servicing England AFB and the cities of Alexandria and Pineville. The major attributes of utility systems in the ROI are processing and distribution capacities, storage capacities, average daily consumption, peak demand, and related factors required in making a determination of adequacy of such systems to provide services in the future.

3.2.4.1 Offbase Systems

The City of Alexandria Water Department supplies water to most of the area within the corporate limits of Alexandria, and to several small areas outside of the city, including England AFB. Alexandria also supplies water to the International Paper Company mill located across the Red River in Pineville. The paper mill is the city's largest customer and consumes approximately 47 percent of the water supplied by the city. The city supplies water to over 19,600 meters within the city limits. Within Alexandria, three small private water systems also supply water in very small quantities (i.e., less than 200 gallons per hour) to several small developments.

Alexandria obtains its water from a system of 61 wells, including a large well field in the Kisatchie National Forest approximately 15 miles southwest of the city, and 25 wells spread throughout the city. The Kisatchie field has 36 wells which pump into two 1.5-million-gallon (MG) ground storage reservoirs for gravity feed via a 48-inch line to a pump station in Alexandria. The city has three elevated tanks with a total capacity of 2.5 MG and four ground storage reservoirs with a capacity of 2.2 MG to supply pumped storage to the elevated tanks (City of Alexandria 1992a). The wells spread throughout the city supply the ground storage reservoirs or are connected directly into the city's distribution system.

Because of the good quality of the pumped water, the city does not treat its water except for chlorination. The maximum daily capacity for the Alexandria system is 29 million gallons per day (MGD). The city supplied an average of 22.5 MGD in 1991, down from 23.1 MGD in 1990. The City of Pineville has its own water production and distribution system with a maximum daily capacity of 9 MGD. The city supplied an average of 1.5 MGD in 1990 and 1991.

Wastewater in the ROI is treated at treatment plants maintained by the City of Alexandria and the City of Pineville. The City of Alexandria Wastewater Department provides wastewater services for the City of Alexandria and several areas outside the city, including England AFB. The peak capacity of the

Alexandria plant is 20 MGD; the plant currently maintains an average daily flow of 10 MGD. The city uses an extended aerated lagoon system with a 5-day retention capacity of 14 MGD. The minimum operating capacity for this plant is 3 MGD. Pineville's wastewater treatment plant has a peak capacity of 3 MGD; currently, the plant treats approximately 2.8 MGD. The Pineville plant also uses an extended aerated lagoon system.

The City of Alexandria Sanitation Department collects and disposes of solid waste generated in the city by households and some professional businesses. Solid waste from most business and industrial locations is collected by several private companies. The Alexandria area generates approximately 40,000 tons of solid waste annually, of which 350 to 375 tons per week are estimated to be garbage and 300 to 400 tons per week are yard waste. No documented data are available for historic annual solid waste generated in the city (D. Hair, personal communication, 1992). The city currently operates a landfill that receives only yard waste, which is collected separately from household garbage. Household garbage is shipped via a privately owned transfer station to a landfill near Monroe, Louisiana. There is currently no landfill in Rapides Parish.

The amount of solid waste shipped to the landfill has been reduced as a result of implementation in August 1991 of an eight-phase, citywide recycling program for glass, plastics, paper, newspaper, cardboard, and metal. The last phase of the program was implemented in May 1992. The city is required by a state law passed in 1990 to reduce the amount of solid waste that is landfilled by 25 percent by 1995. The City of Pineville also has its own sanitation department, but there is no documented data regarding the amount of solid waste collected. Solid waste in unincorporated areas of Rapides Parish, including England AFB, is collected by private waste haulers.

The City of Alexandria Electric Production and Distribution departments are responsible for providing electricity to Alexandria and several small areas outside the city limits. While the city has the capability to produce electricity with its 156.3-megawatt (MW) D.G. Hunter Generating Station, most electricity is purchased from other sources because of cost considerations. The four-unit Hunter Generating Station is used for standby and peak power production. The four boiler units are fired with natural gas with the capability to use No. 2 diesel fuel as an alternative.

The city obtains most of its electricity from three sources: the 530-MW coal-fired Rodemacher Station near Boyce, hydroelectric power and power from the wholesale electric grid purchased through the Louisiana Energy and Power Authority (LEPA), and power purchased from the Central Louisiana Electric Company, Inc. (CLECO). The city, through LEPA, owns a 10 percent share (53 MW) of the Rodemacher Power Station. LEPA owns an additional 10 percent, CLECO owns 30 percent, and the City of Lafayette owns the remaining 50 percent. In 1991, the city distributed 610.4 million kilowatt-hours (kWh): 8 percent produced by the city's plant, 22 percent obtained from

CLECO, 5 percent obtained from hydroelectric sources, and 65 percent through LEPA.

CLECO operates solely in Louisiana and serves over 200,000 customers within a 14,000-square-mile territory, consisting primarily of small communities and rural areas in 23 parishes (Central Louisiana Electric Company, Inc. 1991). CLECO provides electricity to the residents of Pineville and to England AFB. The utility owns or is part owner of four generating stations fueled by natural gas, coal, and lignite. CLECO produced 6,010 million kWh in 1991, up 1.4 percent from 1990 (O. Fallon, personal communication, 1992). Peak demand in 1991 was 1,218 MW.

The City of Alexandria Gas Department provides natural gas service to approximately 21,000 residential, commercial, and industrial customers in the city and some areas outside the city, including England AFB. Natural gas supplied by the city is obtained from the Louisiana Municipal Natural Gas Purchasing and Distribution Authority and transported to the city's distribution system by Louisiana Intrastate Gas Company. The city supplied approximately 1,883 million cubic feet (MMcf) of natural gas in 1991, or an average of 5.2 MMcf per day. The city is currently considering proposals for construction of a new natural gas pipeline for Alexandria. The proposed pipeline would connect to interstate pipelines to provide the City of Alexandria greater access to other natural gas markets.

Residents of Pineville receive natural gas service from the Trans Louisiana Gas Company. The company supplied an average of 1.7 MMcf to residents of Pineville in 1991 (T. Hill, personal communication, 1992).

3.2.4.2 Onbase Systems

England AFB does not maintain any utility production (except for emergency generators) or processing facilities; all utilities are supplied from outside the base. Utility use for water, wastewater, solid waste, electricity, and natural gas for the base from 1988 to 1991 is summarized in Table 3.2-6.

Table 3.2-6

England AFB Utility Usage, 1988-1992

	1988	1989	1990	1991	1992 (Closure)
Water Consumption (MGD)	0.58	0.49	0.51	0.45	<0.01
Wastewater Treatment (MGD)	0.36	0.30	0.55	0.51	<0.01
Solid Waste (tons per day)	--	--	--	7.06	<0.01
Electrical Consumption (million kWh/day)	0.11	0.12	0.12	0.12	<0.01
Natural Gas Consumption (MMcf/day)	0.35	0.29	0.28	0.13	<0.01

Sources: U.S. Air Force 1992c, h.

Potable drinking water is supplied to England AFB by the City of Alexandria Water Department. In 1991, the base consumed 164.6 MG of water, or an average of 0.45 MGD. The total number of gallons consumed by the base in 1991 represented less than 2 percent of the total 8.7 billion gallons produced by the City of Alexandria Water Department.

Wastewater from England AFB is treated at the City of Alexandria Wastewater plant. The base produces approximately 3.1 percent of the total average daily flow to the plant. In 1991, the base wastewater flow was approximately 185.4 MG, or an average of 0.51 MGD. The base has a wastewater discharge permit (Permit 3-1992) from the City of Alexandria authorizing it to discharge industrial and other process wastewater into the city's sewer system. England AFB is required to perform quarterly monitoring of its discharges to ensure that it is in compliance with the water quality parameters of the permit. The existing 1-year permit expires on December 31, 1992 (City of Alexandria 1991d).

England AFB generated 2,580 tons of solid waste in 1991, or 7.1 tons per dav (U.S. Air Force 1992c). Of this amount, 684 tons were generated by the military family housing area. The base recently instituted an active recycling program. Materials that were recycled from the solid waste generated in 1991 include 125 tons of metal, 123 tons of high-grade scrap, 76.6 tons of paper, 5.4 tons of glass, 0.7 ton of plastics, 0.4 ton of aluminum cans, and 58 tons of other recyclable material not listed above. Solid waste is collected under contract by Omega 1 of Alexandria and transported via a transfer station to a landfill near Monroe, Louisiana.

Electrical service is provided to England AFB by CLECO. The base is CLECO's fourth largest customer. In 1991, the base consumed a total of 43.6 million kWh, or an average of 0.12 million kWh per day. England AFB consumes approximately 0.7 percent of CLECO's total electrical production. Electricity is provided to the base via a substation located outside the base near the base trailer home park.

The City of Alexandria Gas Department supplies natural gas to England AFB. Approximately 48.3 MMcf of natural gas, or an average of 0.13 MMcf per day, was consumed by the base in 1991. In 1990, the base consumed 102.6 MMcf, or 0.28 MMcf per day.

Preclosure Reference. As presented in Table 3.2-7, utility demand in the ROI has historically remained relatively stable, with small yearly increases or decreases. Utility demand has also been consistent with population changes that have occurred in the Alexandria/Pineville area.

Table 3.2-7

Utility Demands in the Region of Influence

	1988	1989	1990	1991	1992 (Closure)
Water Consumption (MGD)					
Alexandria[1]	23.9	22.9	23.1	22.5	19.4
Pineville	1.3	1.3	1.5	1.5	1.2
Wastewater Treatment (MGD)					
Alexandria[1]	15.9	21.1	8.2	8.2	6.6
Pineville	2.2	2.2	2.4	2.3	2.3
Solid Waste[2] (tons/day)					
Alexandria	124.1	123.6	123.0	123.6	112.6
Pineville	30.2	30.4	30.6	30.8	27.8
Electrical Consumption (million kWh/day)					
Alexandria	1.7	1.7	1.8	1.8	1.6
CLECO[3]	14.9	15.7	16.2	16.5	16.3
Natural Gas Consumption[2] (MMcf/day)					
Alexandria[1]	5.8	6.1	4.9	5.2	5.1
Pineville[4]	--	--	1.8	1.7	1.6

Notes: [1]Includes England AFB.
[2]Based on per capita generation rate of 5 pounds per day.
[3]Demand for entire CLECO service area.
[4]Natural gas supplied by Trans Louisiana Gas Company.

Sources: City of Alexandria 1991a,b,c,e; O. Fallon, personal communication, 1992; T. Hill, personal communication, 1992; U.S. Air Force 1992h.

Closure Baseline. Closure of the base will reduce utility use at England AFB to a very small percentage of current use (Table 3.2-6). Potable water supplied by the City of Alexandria would be used by the operating location (OL), but the amount required would be significantly reduced. Nonessential water lines would be drained and shut off. Wastewater treatment provided by the City of Alexandria would be required under caretaker status, but the flow would be negligible. Solid waste collection requirements by a private contractor would also be reduced to a negligible level. Demand for electric power from CLECO, primarily for security lighting and maintaining essential building systems, would be substantially reduced. Natural gas supplied by the City of Alexandria would probably be required only during the winter months to maintain minimal space heating in mothballed facilities. Closure of the base will also reduce the consumption of utilities in the ROI, because most of the personnel employed at the base live in Alexandria and Pineville.

With closure of England AFB, daily demands for water from the cities of Alexandria and Pineville would be reduced by 3.1 and 0.3 MGD, respectively (Table 3.2-7). Flows to the wastewater treatment plants operated by

Alexandria and Pineville would be reduced by 1.6 and 0.5 MGD, respectively. Solid waste generation would be reduced by 11 and 3 tons per day in Alexandria and Pineville, respectively. Electricity demands on the City of Alexandria would be reduced by 0.2 million kWh per day and by approximately 0.15 million kWh per day on CLECO. Natural gas demands on the City of Alexandria and Trans Louisiana Gas Company would both decrease by less than 0.1 MMcf per day.

3.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials and waste management activities at England AFB are governed by specific environmental regulations. For the purpose of this analysis, the terms hazardous waste and hazardous materials mean those substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S. Code (USC) §9601-9675, as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 USC §6901-6992, as amended. In general, this includes substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or the environment when released into the environment.

The U.S. Environmental Protection Agency (EPA) has granted the State of Louisiana the authority to promulgate and enforce environmental regulations under RCRA. The state regulations, which must be at least as stringent as the federal regulations, are outlined in Louisiana Administrative Code, Title 33, Part V, and administered by the Louisiana Department of Environmental Quality.

Transportation of hazardous materials is regulated by the U.S. Department of Transportation in accordance with Part 49 of the Code of Federal Regulations (CFR). The state regulations, Louisiana Administrative Code, Title 33, Part V, Subpart 2, Chapter 103, are administered by the Louisiana Department of Public Safety and Corrections.

The ROI encompasses all geographic areas that are exposed to the possibility of a release of hazardous materials or hazardous waste. The ROI for known contaminated sites is within the existing boundaries of England AFB. Specific areas of England AFB affected by past and current hazardous materials and waste management operations, including remediation activities, are discussed in the following sections. The information presented reflects a fully operational base prior to the initiation of closure activities.

3.3.1 Hazardous Materials Management

Preclosure Reference. The most commonly used hazardous materials at England AFB include jet (JP-4) and motor fuels, other types of petroleum products, paints, thinners, adhesives, cleaners, lead-acid batteries, pesticides, hydraulic fluids, and halogenated and nonhalogenated solvents. The materials are delivered to Base Supply (Buildings 1317 and 1322), and from there distributed to the workplaces in which they are used, except for jet and motor fuels, which are delivered to the POL area by tanker truck and rail. The Civil Engineering Squadron supply shop also receives and stores paints, thinners, and some adhesives.

The *Hazardous Waste Management Plan, England AFB, Louisiana* (Entech, Inc. 1991a) identifies responsibilities and procedures for managing hazardous waste, used petroleum products, and polychlorinated biphenyls (PCBs). England AFB also has a *Spill Prevention and Response Plan* (U.S. Air Force 1991b) that contains a detailed description of facilities in which hazardous materials are used and a list of all hazardous materials on the premises. The *Spill Prevention and Response Plan* also identifies spill preventio practices and site-specific contingency plans in case of a spill.

Closure Baseline. After base closure, only the OL and associated contractors will be using hazardous materials All parties will be responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. In accordance with Air Force policy, the OL will comply with the Superfund Amendments and Reauthorization Act (SARA), Title III, and the Louisiana Administrative Code Title 33, Part V.

The OL will be responsible for the safe storage and handling of all hazardous materials used in conjunction with all base maintenance operations, such as paints, paint thinners, solvents, corrosives, ignitables, pesticides, and miscellaneous wastes associated with vehicle and machinery maintenance (e.g., motor oils and fuels). These materials will be delivered to the base in compliance with the Hazardous Materials Transportation Act (HMTA) under 49 CFR.

3.3.2 Hazardous Waste Management

Preclosure Reference. Normal operations at England AFB currently produce wastes defined as hazardous by RCRA (40 CFR 261-265) and the Louisiana Hazardous Waste Law (Louisiana Administrative Code, Title 33, Part V, Chapter 49). The Louisiana Department of Environmental Quality enforces the RCRA regulations as modified by the state's regulations.

The primary activities that generate approximately 8,500 pounds of hazardous waste per month are aircraft and vehicle maintenance, including spray painting, solvent degreasing, paint stripping, and corrosion control. Paint and paint-stripping wastes and spent solvents are the primary wastes generated. The base also generates waste hydraulic and lubricating oils, and waste JP-4. In addition, the base generates a large amount of waste oil that is not currently regulated by RCRA. The facilities listed in Table 3.3-1 routinely generate hazardous waste and waste oil.

Table 3.3-1

Industrial Operations Generating Hazardous Wastes and Waste Oil Products

Location	Description of Waste	Hazard[1] Code	EPA Hazard[2] Number	Annual Generation Rate
Non-Destructive Inspection Lab (Bldg. 2528)	X-Ray Fixer	E	D011	30 gal
	Trichloroethane	T	F001	15 gal
	Synthetic Oil	-	-	180 gal
	Magnaflux	-	-	50 gal
Corrosion Control Facility (Bldg. 2502)	Methyl Ethyl Ketone (MEK)	I	F001	540 gal
	Turco Paint Stripper	I, T	D001, D007, D008	540 gal
	Rags Contaminated with Paint and MEK Residue	-	D001	1,020 gal
	Safety-Kleen Solvent	I	D001	300 gal
Aerospace Ground Equipment Shop (Bldg. 120)	Antifreeze Ethylene Glycol	-	-	200 gal
	Hydraulic Fluid	-	-	240 gal
	Mineral Oil	-	-	60 gal
	Safety-Kleen Solvent	I	D001	360 gal
	Synthetic Oil	-	-	120 gal
Wheel and Tire Shop (Bldg. 814)	Safety-Kleen Solvent	I	D001	2,160 gal
Fuel Systems Repair Shop (Bldg. 814B)	Military Purging Fluid Mixed with JP-4	-	-	600 gal
Armament Systems Shop (Bldg. 2108)	Safety-Kleen Solvent	I	D001	2,160 gal
Phase Inspection Shop (Bldg. 2502)	Engine Oil	-	-	285 gal
	Synthetic Oil	-	-	180 gal
	Hydraulic Fluid	-	-	60 gal
Welding Shop (Bldg. 2502)	Sandblasting Waste (Poly Plus Beads with Dried Waste Paint)	T	D001, D007, D008	600 lb
Combat Munitions (Bldg. 1630)	Safety-Kleen Solvent	I	D001	120 gal
	Silicone Brake Fluid	-	-	300 gal
	Denatured Alcohol	-	-	60 gal
	Unserviceable Munitions	R	D003	Varies
Jet Engine Shop (Bldg. 2102)	Trichloroethane	T	F001	36 gal
	Alkaline Descaling Compound	C	D002	440 gal
	Fingerprint Neutralizer	I	D001	12 gal
	Carbon Remover (Methylene Chloride)	C, T	D002, F001	20 gal
	Synthetic Oil	-	-	660 gal
	Hydraulic Fluid	-	-	120 gal
	Safety-Kleen Solvent	I	D001	440 gal
Pneudraulics Shop (Bldg. 2502)	Stoddard Solvent (PD-680)	I	D001	30 gal
	Hydraulic Fluid	-	-	10 gal
Electro/Environmental Shop (Bldg. 2502)	Lead-Acid Storage Batteries	C, E	D002, D008	300 gal
	Dry Nickel-Cadmium Batteries	E	D006	300 gal
	Engine Oil	-	-	60 gal
Jet Engine Test Cell (Bldg. 2618)	Engine Oil	-	-	60 gal
	Jet Fuel (JP-4)	I	D001	Amount varies because waste JP-4 is generated only when spilled at this location.

Table 3.3-1, Page 2 of 2

Location	Description of Waste	Hazard[1] Code	EPA Hazard[2] Number	Annual Generation Rate
Photography Lab (Bldg. 1009)	Kodak Fixer	E	D011	600 gal
	Mixed Photo Developing Chemicals	U	-	600 gal
Auto Hobby Shop (Bldg. 1434)	Engine Oil	-	-	2,100 gal
	Safety-Kleen Solvent	I	D001	360 gal
Fire Department (Bldg. 500)	Engine Oil	-	-	120 gal
	Contaminated Material from Training	-	-	Varies
74th Aircraft Maintenance Unit (Bldg. 2502)	Synthetic Oil	-	-	36 gal
	Hydraulic Fluid	-	-	120 gal
	Jet Fuel (JP-4)	I	D001	600 gal
75th Aircraft Maintenance Unit (Bldg. 2102A)	Synthetic Oil	-	-	60 gal
	Hydraulic Fluid	-	-	180 gal
	Jet Fuel	I	D001	660 gal
Vehicle Maintenance Shop (Bldg. 1736)	Engine Oil	-	-	1,200 gal
	Transmission Fluid	-	-	300 gal
	Safety-Kleen Solvent	I	D001	1,200 gal
76th Aircraft Maintenance Unit (Bldg. 525)	Synthetic Oil	-	-	60 gal
	Hydraulic Fluid	-	-	120 gal
	Jet Fuel (JP-4)	I	D001	600 gal
Refueling Maintenance Shop (Bldg. 2401)	Engine Oil	-	-	360 gal
	Hydraulic Fluid	-	-	120 gal
	Jet Fuel (JP-4)	I	D001	600 gal
Base Exchange Service Station (Bldg. 1800)	Engine Oil	-	-	900 gal
Lake Charles Radar Site	Engine Oil	-	-	120 gal
	Stoddard Solvent (PD-680)	I	D001	12 gal
	Ethanol	I	D001	12 gal
Reprographics (Bldg. 1912)	Mineral Spirits	-	-	120 gal

Notes: [1]Hazard Code
I - Ignitable
R - Reactive
T - Toxic
C - Corrosive
U - Unclassified, to be verified
E - Toxicity characteristics
[2]EPA Hazard Number as defined in 40 CFR 261
D001 Ignitable waste
D002 Corrosive waste
D003 Reactive waste
D006 Cadmium
D007 Chromium
D008 Lead
D011 Silver
F001 The following spent halogenated solvents used in degreasing: tetrachloroethylene; trichlorethylene; methylene chloride; 1,1,1-trichloroethane; carbon tetrachloride; and chlorinated fluoroca ns.

Source: Entech, Inc. 1991b.

A number of facilities use parts cleaners leased under service contracts from Safety-Kleen Corporation and Pure Solve, Inc. These self-contained parts cleaners are serviced at regular intervals by the service contractor, who replaces the used cleaning solvent with fresh solvent. The waste solvent is then recycled by the service contractor.

The *Hazardous Waste Management Plan* has been prepared and implemented to ensure compliance with RCRA requirements at the base. All personnel who manage or handle hazardous waste must receive annual safety and documentation protocol training. A *Waste Minimization Guidance* plan (Hazardous Materials Technical Center 1988) has also been prepared which provides information and identifies procedures to reduce and minimize the generation of hazardous waste at the base.

In general, waste is stored at various satellite accumulation points near the points of generation in designated containers (55-gallon drums). The waste is then either transferred to one of five designated accumulation points or to the DRMO conforming storage area at the Building 2531 complex for offsite recycling or disposal by permitted contractors. Storage at the accumulation points cannot exceed 90 days from the time the waste begins to accumulate. These structures meet all of the requirements for conforming storage areas as specified in 40 CFR 264, Subpart I, and are regularly inspected to ensure compliance with all RCRA and state regulations. The satellite accumulation points and the five designated accumulation points at England AFB are listed in Table 3.3-2.

A RCRA Part B Permit was issued by the Louisiana Department of Environmental Quality on October 30, 1991, for England AFB to operate a hazardous waste treatment, storage, and disposal (TSD) facility in accordance with RCRA and Louisiana state regulations. The permit was issued for operation of the DRMO facility as a permitted container storage area for up to 3,000 gallons of hazardous waste. Hazardous waste is stored for longer than 90 days in two conforming storage buildings in the DRMO storage yard while arrangements are made for proper disposal of the waste. The DRMO facility at England AFB operates as a branch of the DRMO facility at Fort Polk. Arrangements for recycling/reclamation or final disposal of the stored hazardous waste at a licensed TSD facility are made through the main office at Fort Polk.

In addition to conventional hazardous waste, unserviceable munitions are also generated by the base. Unserviceable munitions are those that have extended beyond their shelf life or have unusable threadings. At England AFB, unserviceable munitions are stored in Building 1633, within the Munitions Storage Area. Since March 1991, the unserviceable ordnance has been disposed of through a private contractor who picks up the munitions from Building 1633 and detonates them using open burn operations at a contractor-owned, contractor-operated state-permitted facility.

Prior to March 1991, England AFB operated an open burn/open detonation (OB/OD) facility at Claiborne Range under an interim status RCRA Part B Subpart X Permit (40 CFR 264, Subpart X [Miscellaneous Units]). Interim status for operation of the OB/OD facility was granted by EPA on December 21, 1989. England AFB filed a notice of intention to close the facility with the EPA in June 1991 and the Louisiana Department of Environmental Quality in July 1991. The Air Force is pursuing responses from

Table 3.3-2

Hazardous Waste and Waste Oil Storage Locations

Location (Building #)	Description
Accumulation Points and Waste Oil Storage (90-day storage)	
519	Non-Destructive Inspection Facility
529	76th Aircraft Maintenance Unit Support Section
1715	Civil Engineering Compound Storage Shed
2104	Propulsion Branch Shop
2405	Refueling Maintenance Shop
Satellite Accumulation Points	
815	Fuels System Repair Shop
1630	Munitions Maintenance Administration
1703	Civil Engineering Paint Shop
1707	Vehicle Maintenance Shop
2102	Propulsion Shop
2102A	74th Aircraft Maintenance Unit
2102A	75th Aircraft Maintenance Unit
2102A	76th Aircraft Maintenance Unit
2502	Aircraft Corrosion Control Shop
2502	Metals Technology Shop
2505	Aircraft Corrosion Control Facility
2527	Precision Measurement Shop
Waste Oil Storage Areas	
500	Base Fire Station
1434	Auto Hobby Shop
1717	Civil Engineering Compound Shop
1722	Vehicle Maintenance Shop
1800	Base Exchange Service Station

Source: Entech, Inc. 1991a.

both the EPA and the Louisiana Department of Environmental Quality. The facility will be closed in compliance with the interim status permit.

Approximately 36 tons of hazardous waste were generated in 1990 and 1991 (Table 3.3-3) (U.S. Air Force 1992g). Hazardous waste was shipped off the site to recycling or disposal facilities in Louisiana, Texas, Kentucky, and Georgia. Major waste categories include paint waste and paint strippers, halogenated and nonhalogenated solvents, lead-acid storage batteries, nickel-cadmium batteries, mercury and lithium batteries, and photochemical wastes.

The base small arms range is located in the southeast portion of the base, west of the FAA radar facility and 300 yards north of Bayou Rapides. The range, originally constructed as a rifle range in 1966, was converted to a small arms range in 1970. The Air Force in 1992 contracted with the U.S. Geological Survey (USGS) to conduct an investigation to assess potential surface and subsurface trace metal contamination, particularly lead contamination. The investigation included installing monitoring wells and drilling boreholes for the collection of groundwater and soil samples. Results of the investigation are pending.

Closure Baseline. At the time of closure, all hazardous waste generated by base functions will have been collected from all accumulation points and satellite accumulation points and disposed of through the DRMO. The accumulation points and satellite accumulation points, as well as the DRMO facility, will be closed in accordance with the RCRA Part B Permit. DRMO functions currently performed at England AFB will revert back to Fort Polk. A closure plan for the DRMO facility will be submitted to the EPA and the Louisiana Department of Environmental Quality. As previously described, a notice of intention to close the OB/OD facility at Claiborne Range has already been submitted to EPA and the Louisiana Department of Environmental Quality. Based on the results of the USGS investigation, appropriate remedial action will be taken by the Air Force in accordance with applicable regulations prior to the disposal of this facility and surrounding land.

Hazardous waste generated by the OL will be tracked to ensure proper identification, storage, transportation, and disposal, as well as implementation of waste minimization programs.

3.3.3 Installation Restoration Program Sites

The Installation Restoration Program (IRP) is an Air Force program to identify, characterize, and remediate environmental contamination on its installations. Although legally acceptable at the time, procedures followed prior to the mid-1970s for managing and disposing of many wastes often resulted in contamination of the environment. The program has established a process to evaluate past disposal sites, control the migration of contaminants, and control potential hazards to human health and the environment. Section 211 of SARA, codified as the Defense Environmental Restoration Program (DERP), of which the Air Force IRP is a subset, ensures that the Department of Defense (DOD) has the authority to conduct its own environmental restoration programs.

Prior to passage of SARA and the establishment of the National Contingency Plan (NCP) for hazardous waste sites, Air Force IRP procedures followed DOD policy guidelines mirroring the EPA's Superfund program. Since SARA was passed, most federal facilities have been placed on a federal docket and the EPA has been evaluating the facilities' waste sites for possible inclusion on the National Priorities List (NPL). England AFB is not listed on the NPL. Originally, the IRP was divided into four phases that were consistent with CERCLA:

- Phase I: Problem Identification and Records Search
- Phase II: Problem Confirmation and Quantification
- Phase III: Technology Development
- Phase IV: Corrective Action

Table 3.3-3

Hazardous Wastes Generated at England AFB in 1990 and 1991

Waste Description	EPA Hazard Number[1]	Quantity Generated in 1990 (lb)	Quantity Generated in 1991 (lb)
Ignitable Off-Specification M256 Chem Kit (Methanol Mercuric Compound)	D001, D009	N/A[2]	7
Ignitable Spent Paint from Aircraft Painting Operations (Mixture of Thinner and Paint)	D001	14,428	1,120
Ignitable Spent Solvent from Equipment Maintenance Degreasing Operations (Methyl Alcohol)	D001, F003	N/A	215
Ignitable Off-Specification Jet Fuel (JP-4)	D001	929	135
Ignitable Outdated Adhesive Sealing Compound	D001	N/A	6
Ignitable Spill Residue from Jet Engine Maintenance Operations (JP-4 and Absorbent Material)	D001	3,470	600
Ignitable Spent Paint Thinner from Facility Painting Operations (Mineral Spirits and Paint)	D001	400	219
Ignitable Spent Solvents from Equipment Maintenance Degreasing Operations (Reused/Recycled Petroleum Naphtha)	D001	35,314	34,494
Scrap Nickel-Cadmium Batteries filled with Alkali	D002, D006	1,432	1,505
Spent Paint Stripper from Aircraft Painting Operations (Methylene Chloride and Paint)	D002, F002	1,890	130
Reactive Off-Specification Unserviceable Munitions, Class A (High Explosive Ammunition/Projectiles/Mines)	D003	6	215
Reactive Off-Specification Unserviceable Munitions, Class B (Rocket Motor/ Pyrotechnics and Flares)	D003	106	2,019
Reactive Off-Specification Unserviceable Munitions, Class C (Small Arms Ammunition, Fuses, and Smokeless Powder)	D003	126	302
Inorganic Ash Residue from Incineration of Unserviceable Munitions (Ash Arsenic, Lead, and Selenium)	D004, D008, D010	N/A	3,821
Outdated Electronic Radar Device (Barium, Cadmium, Chromium, and Lead)	D005, D006, D007, D008	N/A	590

Table 3.3-3, Page 2 of 2

Waste Description	EPA Hazard Number[1]	Quantity Generated in 1990 (lb)	Quantity Generated in 1991 (lb)
Spent Paint Booth Filters from Aircraft Painting Operations (Paint Filters with Chromium)	D007	N/A	267
Replacement Off-Specification Equipment at Electronic Warfare Laboratory (Mercury and Glass)	D009	18	4
Spent Solvent from Aircraft Painting Operations (Methylene Chloride, Paint, and Rags)	D007, F002, F003, F005	N/A	1,248
Ignitable Spill Residue from Jet Engine Maintenance Operations (JP-4 and Absorbent Material)	D001, D018	N/A	574
Spent Paint Stripper from Aircraft Painting Operations (Reused/Recycled Methylene Chloride and Paint)	F001	1,340	10,910
Spent Paint Stripper from Aircraft Painting Operations (Methylene Chloride and Paint)	F002	1,947	4,900
Spent Paint and Thinner from Aircraft Painting Operations (Paint and Thinner)	F003	2,113	2,000
Spent Paint and Thinner from Aircraft Painting Operations (Reused/Recycled Paint Thinner)	F003	1,191	2,000
Spent Paint and Thinner from Aircraft Painting Operations (Reused/Recycled Paint Thinner)	F005	7,288	3,774
Out-of-Date Rat/Rodent Poison from Entomology Facility (Warfarin)	P001	N/A	2
TOTAL:		**71,998 lb (35.99 tons)**	**71,057 lb (35.53 tons)**

Notes: [1]EPA Hazard Number as defined in CFR Part 40, Section 261.

D001 Ignitable | D006 Cadmium
D002 Corrosive waste | D007 Chromium
D003 Reactive waste | D008 Lead
D004 Arsenic | D009 Mercury
D005 Barium | D010 Selenium

F001 The following spent halogenated solvents used in degreasing: tetrachloroethylene; trichlorethylene; methylene chloride; 1,1,1-trichloroethane; and carbon tetrachloride and chlorinated fluorocarbons.

F002 The following spent halogenated solvents: tetrachloroethylene; methylene chloride; trichloroethylene; 1,1,1-trichloroethane; chlorobenzene; 1,1,2-trichloro-1,2,2-trifluoroethane; ortho-dichlorobenzene; trichlorofluoromethane; and 1,1,2-trichloroethane.

F003 The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol.

F004 The following spent nonhalogenated solvents: cresols, cresylic acid, and nitrobenzene.

F005 The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane.

P001 Warfarin, when present at concentrations greater than or equal 0.3%.

[2]N/A = Not applicable.

Source: *U.S. Air Force 1992g.*

After SARA was passed in 1986, the IRP was realigned to incorporate the terminology used by the EPA and to integrate the new requirements of the NCP. The result was the creation of three action stages:

- Preliminary Assessment/Site Inspection (PA/SI)
- Remedial Investigation/Feasibility Study (RI/FS)
- Remedial Design/Remedial Action (RD/RA)

The PA portion of the first stage under the NCP is comparable to the original IRP Phase I and consists of a records search and interviews to determine whether potential problems exist. A brief SI, that may include soil and water sampling, is performed to give an initial characterization or to confirm the presence of contamination at a potential site.

The RI portion of the second stage is similar to the original Phase II and consists of additional fieldwork and evaluations to assess the nature and extent of contamination. It includes a risk assessment and a determination of the need for site remediation.

The original IRP Phase IV has been replaced by the FS and RD portion of the third stage. The development, evaluation, and selection of alternatives to remediate the site is documented in the FS. The selected alternative is then designed (RD) and implemented (RA). Long-term monitoring is often performed in association with site remediation to assure future compliance with contaminant standards or achievement of remediation goals.

The Phase III portion of the IRP process is not included in the normal SARA process. Technology Development (TD) under SARA is performed under separate processes including the Superfund Innovative Technology Evaluation program. The Air Force has an active TD program in cooperation with the EPA to find solutions to problems common to Air Force facilities. A representation of the IRP management process under CERCLA is shown in Figure 3.3-1.

The closure of England AFB will not affect ongoing IRP activities, which will continue in accordance with applicable federal, state, and local regulations to protect human health and the environment, regardless of the alternative chosen for reuse.

Preclosure Reference. Because the Air Force initiated the IRP process at England AFB in November 1982, prior to the terminology and procedural changes, references to both phases and stages are contained in the IRP administrative record. The Phase I, Problem Identification/Records Search, published in May 1983 (Engineering-Science 1983), was conducted to identify sites of potential contamination and their potential for mitigation. This study involved a review of past and present industrial operations conducted at the base. Applicable federal, state, and local agencies were also contacted for pertinent base-related environmental information. The collected information was used to determine the past management practices regarding the use, storage, treatment, and disposal of hazardous materials from various base

INSTALLATION RESTORATION PROGRAM PROCESS
(The CERCLA Process)

Sources of Information on IRP:

- Air Force Base Disposal Agency Operating Location (OL)
- Administrative Record (Air Force, EPA, and Louisiana Department of Environmental Quality)

Site Discovery

Preliminary Assessment / Site Inspection (PA / SI)

Remedial Investigation / Feasibility Study (RI / FS)

Record of Decision (ROD)

Remedial Design / Remedial Action (RD / RA)

BR-ENG/018

IRP Process for England AFB

Figure 3.3-1

operations and to identify all known past disposal sites and other possible sources of contamination.

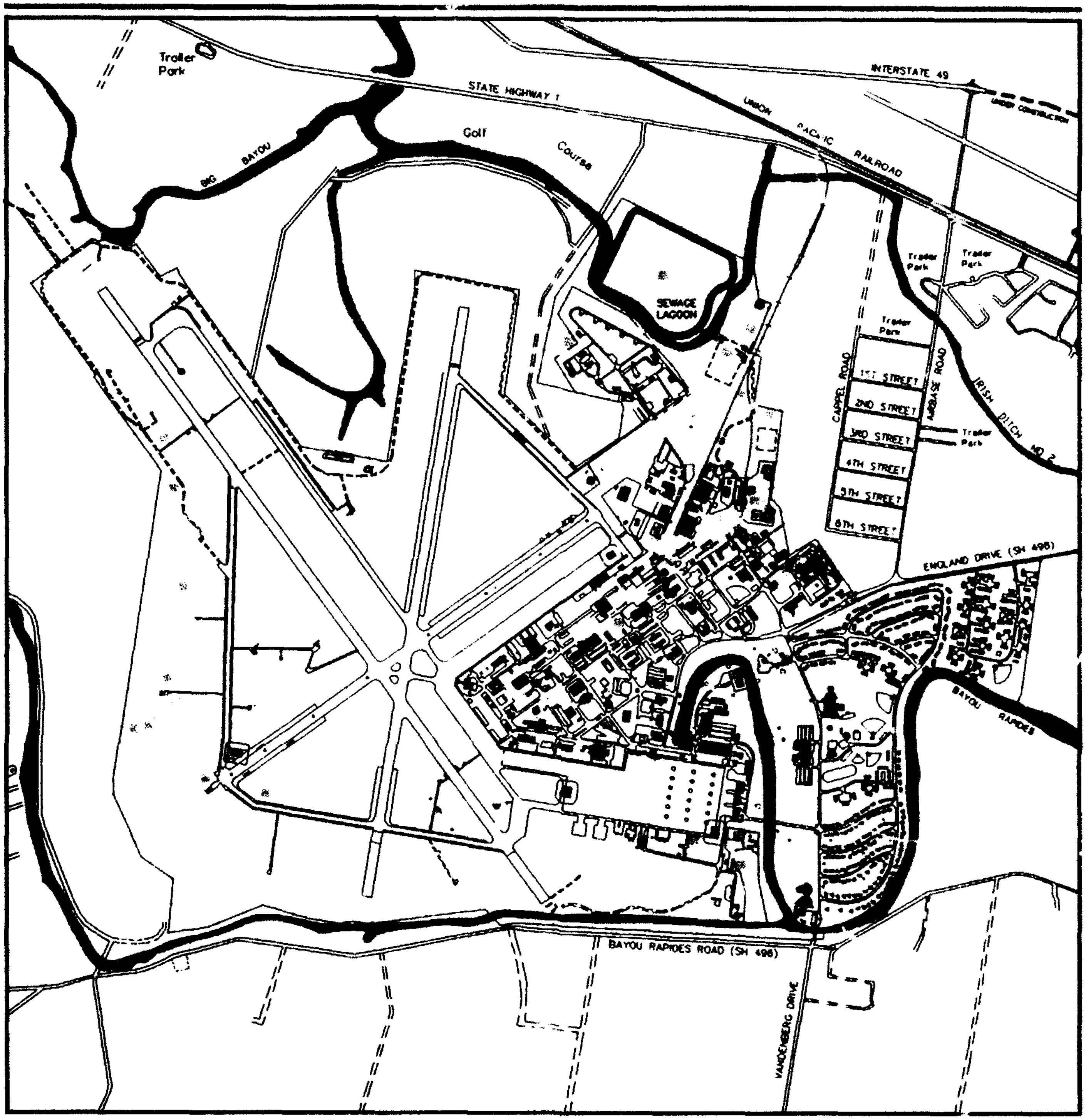
Forty potential sites were identified in the Phase I study, including 17 disposal sites, 9 spill sites, 4 fire training areas, 6 storage area sites, 2 low-level radioactive waste disposal sites, an old incinerator site, and a sewage lagoon (Figure 3.3-2). Descriptions of the 40 sites identified in the Phase I study and 4 sites identified during subsequent investigations (described below) are presented in Table 3.3-4.

Of the 40 sites identified in the Phase I study, 20 were assessed using the EPA Hazard Assessment Rating Methodology (HARM). Based on the HARM scores, six sites (Sites FT-1, D-15, SP-3, SP-4, SP-5, and SP-6) were considered to have a moderate potential for environmental contamination and were recommended for further study in IRP Phase II. The other 14 sites were determined to have a low potential for environmental contamination. The 20 remaining sites were not considered to have the potential for contamination and were not evaluated using HARM; these sites were not considered further.

The Phase II Stage 1 study, published in November 1985 (Radian Corporation 1985), and conducted between January and June 1984, considered the six sites recommended for further investigation in Phase I and one additional site (Site SP-7) identified for additional study by base personnel. The field program for Phase II Stage 1 consisted primarily of hand-augering soil borings and collecting soil and groundwater samples. A total of 96 soil samples were collected from 33 boreholes located within the 7 sites. The Phase II Stage 1 study recommended additional monitoring work be conducted to quantify and further assess the extent of contamination. The Phase II study also recommended the reassessment of potential impacts of Phase I sites that were not included in the Phase II Stage 1 study.

Following completion of the Phase II Stage 1 study (and adoption by the Air Force of the new IRP terminology), four additional IRP sites were identified: SS-21, SS-23, SS-24, and OT-44 (Figure 3.3-2). Site SS-21 is an extension of Site WP-2 (old Site D-15) and includes the entire POL area. Site SS-23 was previously included as part of Site FT-1 and Site SS-24 was discovered in 1989 during field investigations for Site SS-23. Site OT-44 was identified as Site D-18 on one map in the Phase I Records Search, but was not discussed in the text of the report. A summary of the types of studies that have been completed for all 44 IRP sites is presented in Table 3.3-5.

In addition to the mandates of the IRP, prior to the transfer of any property at England AFB, the Air Force must also comply with the provisions of CERCLA §120. CERCLA §120(h) requires that, before property can be transferred from federal ownership, the United States must provide notice of specific hazardous waste activities on the property and include in the deed a covenant warranting that "all remedial action necessary to protect human health and the environment with respect to any [hazardous] substance remaining on the property has been taken before the date of such transfer." Furthermore, the



EXPLANATION

■ IRP Site

Estimated Site Boundary

0 500 1000 2000 Feet

England AFB
IRP Site Locations

Figure 3.3-2

Table 3.3-4

IRP Sites Identified at England AFB

IRP ID*	Site Name	Description of Site
FT-1 (FT-1)	Fire Training Area No. 1	Site FT-1 was utilized from the early 1940s until 1964 as a fire training area, and consists of an approximate 100-foot-diameter bermed area, a drum storage site, and an old B-29 aircraft. The drum storage site was subsequently designated as IRP Site SS-23. Approximately two times per month, contaminated waste (oils and sludges) stored in the drums was mixed with JP-4 and placed in a tank within the bermed area and ignited. Protein foams were then used to extinguish the fire.
WP-2 (D-15)	POL Sludge Weathering Pit	This pit was used from approximately 1955 until 1982 to "weather" sludge from POL tank cleanouts. The pit was approximately 2 to 4 feet deep and covered an area of about 900 square feet.
ST-3 (SP-4)	JP-4 Underground Line Leak	A 1,000-gallon JP-4 spill occurred in 1977 or 1978 as a result of a line break near Building 1500 and the base trailer park. A portion of the spilled JP-4 was recovered; contaminated soil was excavated from the site and hauled to Site WP-2 and weathered.
ST-4 (SP-5)	JP-4 Underground Line Leak	A JP-4 fuel line burst in 1989 in the vicinity of Building 2325. The amount of fuel released is not known. Most of the contaminated soil was collected and hauled to Site WP-2 and weathered.
FT-5 (FT-3)	Fire Protection Training Area No. 3	Site FT-5 was used from 1966 to 1981 for fire training activities and consisted of an approximately 75-foot-diameter earth ring with a 1.5-foot berm. Approximately two times per month, 300 gallons of clean JP-4 fuel were ignited at the site and extinguished by fire-fighting personnel using aqueous film-forming foam.
ST-6 (SP-3)	JP-4 Underground Line Leak	This site consists of a line leak that occurred in 1977 or 1978 near the golf course clubhouse. An unknown quantity of JP-4 leaked and flowed into a nearby ditch. The fuel and saturated soil were collected and hauled to the area adjacent to Site WP-2 for dewatering and disposal. The majority of JP-4 probably seeped into an adjacent ditch or was recovered.
ST-7 (SP-2)	JP-4 Tank No. 1319	A major fuel spill occurred in 1969 when JP-4 Tank No. 1319 was accidentally overfilled. Approximately 12,000 gallons of fuel spilled into a drainage ditch and ultimately into the bayou east of the tank. No fuel was recovered.
ST-8 (S-1)	Waste Oil Storage Tank	Site ST-8 is a 500-gallon underground tank located near the horse stable area and used from approximately 1965 until the mid-1970s to store waste aircraft engine oil. The oil was collected routinely by a contractor for offsite disposal. Numerous small spills occurred while loading and unloading the tank.

Table 3.3-4, Page 2 of 5

IRP ID*	Site Name	Description of Site
LF-9 (D-3)	General Refuse Disposal Site	Site LF-9 is a former landfill site used in the 1950s to dispose of general refuse, cardboard, hardfill, garbage, and empty pesticide containers. The site covers approximately 2.5 acres. Area fill-and-cover to depths of 10 to 15 feet was reported to be the normal operation for the landfill. Waste material placed at the site was filled into the groundwater table.
LF-10 (D-8)	Chlorine Gas Cylinder Disposal Site	Site LF-10 is the former burial site of 8 to 12 chlorine gas cylinders. The cylinders are suspected to have contained chlorine gas when buried in the early 1960s in a shallow pit approximately 30 by 30 feet at a depth of 1 to 2 feet. The pit was covered by vegetation.
LF-11 (D-10)	Hazardous Chemical Burial Mound	An unknown number of small containers of chemical agents were buried at the site in 1945 or 1946. The containers are believed to have been chemical warfare training kits. The kits, either M1 or M1A1 Chemical Agents Sampling Kits, were used to teach troops to identify chemical agents under field conditions during World War II. In 1969, workers digging fill dirt in the area of an abandoned rifle range backstop were overcome by an unknown gas. Subsequently, a training kit was found containing several containers labeled HI, HS, PS, CN, and DM.
SS-12 (S-6)	Lake Charles Drum Storage Site	Site SS-12 is an area used to store three to five drums of contaminated waste oil on the Lake Charles Radar Site. Visual examination of the site revealed no evidence of contamination; however, the site presents a potential for contamination from overflow of drums at the site.
FT-13 (FT-2)	Fire Protection Training Area No. 2	Site FT-13 is a former temporary fire training area used from 1964 to 1966. The site was an approximately 75-foot-diameter earth-bermed ring with a 1.5-foot berm. Approximately two times per month, 300 gallons of clean JP-4 fuel were ignited at the site and extinguished by fire-fighting personnel using protein foam.
FT-14 (FT-4)	Fire Protection Training Area No. 4	Site FT-14 is a fire training area constructed in 1981 and is currently used for fire training activities by the base fire department. The site is an approximately 75-foot-diameter earth-bermed ring. Approximately two times per month, 300 gallons of clean JP-4 fuel are ignited at the site and extinguished by fire-fighting personnel using aqueous film-forming foam.
LF-15 (D-4)	General Refuse Disposal Site	This is a former landfill site used to dispose of general refuse, hardfill, and empty pesticide containers from the early 1950s through the mid-1960s. The site was filled to an approximate depth of 10 to 15 feet and closed with 4 feet of local soil.
LF-16 (D-5)	General Refuse Disposal Site	This is a former landfill site (1.5 acres) used in the early to mid-1960s to dispose of general refuse, cardboard, hardfill, garbage, and empty pesticide containers. Area fill-and-cover to depths of 10 to 15 feet was reported to be the normal operation for the landfill. Waste material placed at the site was filled into the groundwater table.

Table 3.3-4, Page 3 of 5

IRP ID*	Site Name	Description of Site
ST-17 (SP-6)	CE Tank Spill	A 6,000-gallon underground storage tank located near Building 2611 near the apron hydrant area was the site of several suspected spill incidents. This "slop tank," first installed in 1972, was used by many shops as an accumulation point for waste oils. The tank was pumped out every 6 months by a contractor who then disposed of the material off the base. Discoloration of surrounding soil indicates spills occurred in loading and/or unloading the tank.
ST-18 (SP-7)	Mogas Underground Tank Leak	A 10,000-gallon motor pool tank suspected to be leaking was replaced in the vicinity of Building 2005 in 1977. No evidence of leakage was observed when the tank was removed, but a potential for contamination exists.
RW-19 (RD-1)	Low-Level Radioactive Waste Disposal Site	Site RW-19 is a suspected burial site for luminous markers from the inside of aircraft and some nonradioactive fluorescent tubes. The low-level radioactive wastes were believed to be buried at the site sometime in 1957 to 1958 to a depth of 4 to 5 feet and covered with soil.
RW-20 (RD-2)	Low-Level Radioactive Waste Disposal Site	Site RW-20 is a suspected burial site of an unconfirmed small amount of electron tubes. The low-level radioactive waste was believed to be buried at the site at an unknown date.
SS-21	Bulk Fuel Storage Area No. 1	Site SS-21 is the POL facility where the base receives, stores, and distributes its bulk fuel. The major product stored is JP-4 aviation fuel; aviation gasoline, diesel fuel, and regular gasoline have been stored there in the past.
OT-22 (D-2)	Scrap Metal Disposal Site	Site OT-22 was used during the 1940s as a burial site for an unknown number of scrap vehicles (jeeps and trucks). The site was closed with several feet of local soil.
SS-23	Fire Training Drum Storage Area No. 1	Site SS-23, with a 20- to 30-drum storage capacity, was utilized from the early 1940s until 1964 to store 55-gallon drums of waste oils and sludges from refueling and aircraft maintenance operations. Approximately two times each month, the waste materials were mixed with JP-4 and burned at Fire Training Area No. 1 (Site FT-1).
SS-24	Fire Training Drum Storage Area No. 2	Site SS-24 was used from the 1940s until 1964 to store approximately 130 fifty-five gallon drums of contaminated oils and sludges from aircraft refueling and maintenance. The wastes were mixed with JP-4 and ignited for fire training exercises in Fire Training Area No. 1 (FT-1).
OT-25 (D-1)	World War II Bomb Disposal Site	The site was used as a burial site for deactivated World War II bombs during the late 1940s. Miscellaneous scrap vehicles may have been disposed of at this site in later years. The site covers less than 1 acre. Disposal trenches were excavated to a depth of 10 to 15 feet. The site is closed with an unknown soil cover thickness.
LF-26 (D-6)	Construction Rubble Disposal Site	Site LF-26 was used for construction rubble disposal from the early 1950s through 1957. The site covers approximately 5.5 acres. Disposal operations were conducted by the area fill method. The depth of fill is reported to be 10 to 15 feet. The site is closed and covered with 4 feet of local soil.

Table 3.3-4, Page 4 of 5

IRP ID*	Site Name	Description of Site
LF-27 (D-7)	Construction Rubble Disposal Site	Site LF-27 was used for construction rubble disposal during the early 1960s. The site covers approximately 7 acres. Disposal operations were conducted by the area fill method. The depth of fill is reported to be 10 to 15 feet. The site is closed and covered with 4 to 5 feet of local soil.
LF-28 (D-9)	Horse Stable Disposal Site	The present horse stable area was apparently used as a construction rubble site in the 1950s through 1968. The site may contain parts of a wrecked B-29 aircraft.
LF-29 (D-11)	Construction Rubble Disposal Site	Site LF-29 was used for construction rubble disposal only.
LF-30 (D-12)	Construction Rubble Disposal Site	Site LF-30 was used for construction rubble disposal only.
LF-31 (D-13)	Construction Rubble Disposal Site	Site LF-31 was used for construction rubble disposal only.
LF-32 (D-14)	Construction Rubble Disposal Site	Site LF-32 was used for construction rubble disposal only.
LF-33 (D-16)	Ammo Area Disposal Site	Site LF-33 was reportedly a dump site of unknown depth and length of operation. The types of wastes reportedly disposed of included general hardfill, cardboard boxes, and glass, as well as construction rubble. The site covers less than 0.1 acre.
LF-34 (D-17)	Claiborne Air-to-Ground Range Disposal Site	Site LF-34 is a scrap metal disposal site used to store the remains of targets used during practice strafing and bombing maneuvers carried out by England AFB aircraft. Fifty or more off-specification 30-gallon paint drums, which appeared to be full, were also stored at this site at one time.
OT-35 (T-1)	Incinerator	A refuse incinerator existed at the site of Building 833 during the 1950s. It was believed to be a brick and concrete incinerator which burned solely general refuse. General refuse probably was stored near the incinerator during periods of operation.
WP-36 (T-2)	Sewage Lagoon	Site WP-36 was the location of the base domestic wastewater treatment facility. The lagoon facility was operated from 1968 to August 1982. Prior to centralizing treatment in the sewage lagoon, all domestic wastewater was treated at individual septic tanks and drainage fields located throughout the base. The lagoon effluent was discharged to the Red River under provisions of the base's National Pollutant Discharge Elimination System permit.
ST-37 (SP-1)	Tank Truck Leak	ST-37 is the site of a truck off-loading line break in the POL area which spilled approximately 1,900 gallons of JP-4 in 1968. Most of the fuel was recovered.

Table 3.3-4, Page 5 of 5

IRP ID*	Site Name	Description of Site
SS-38 (SP-8)	PCB Transformer Spill	The site was the location of a PCB transformer leak on a concrete pad at the hospital in 1979. The material was carefully collected, drummed, and properly stored pending disposal.
SS-39 (SP-9)	PD-680 Spill	Approximately 30 gallons of PD-680 were washed into a ditch near Building 500 in 1977 as a result of the one-time use of PD-680 for cleaning fire engines. The PD-680 was blocked in the ditch using a "hay dam" and cleaned up.
SS-40 (S-2)	Pesticide Storage, Building 1210	Site SS-40 is a building where pesticides were stored in a locked storage area between 1952 and 1985. Twelve PCB transformers were also being stored in Building 1210 in 1983. Building 1210 was demolished in 1985.
SS-41 (S-3)	Pesticide Storage, Building 1703	Site SS-41 is a building where pesticides were stored in a locked storage area between 1975 and 1982.
SS-42 (S-4)	CE Supply Hazard Storage Yard	Base supply solvents, paint thinners, flammables, and other chemical materials were stored in a variety of containers in Building 1317.
SS-43 (S-5)	DRMO (formerly DPDO) Storage Yard	Site SS-43 is a fenced storage compound with an asphalt-paved surface that includes Buildings 2515 and 2531. The site is used by the DRMO (formerly the Defense Property Disposal Office [DPDO]). Prior to 1978, DPDO stored all transformers, flammable materials (in a portable building), expired paints, thinners, scrap metals, and other supplies inside the fenced compound.
(OT-44)	Munitions Burial Site	Site OT-44 is an explosive disposal range located across the railroad tracks and about 1,000 feet southeast of IRP Site LF-27. The site is a mowed field about 300 by 300 feet, with a posted "Danger Explosive Disposal Range Keep Out." The IRP Records Search identified this site as a munitions burial area. There is no further information available concerning this unit.

Note: *Site numbers in parentheses are former IRP site identification numbers.

Sources: Engineering-Science 1983; Radian Corporation 1985; Walk, Haydel & Associates, Inc. 1992a,b.

Table 3.3-5

Status of England AFB IRP Sites

Old Site ID	New Site ID	Title	Type of Study*
FT-1	FT-1	Fire Training Area No. 1	PA/RI
D-15	WP-2	POL Sludge Weathering Pit	PA/EA
SP-4	ST-3	JP-4 Underground Line Leak	PA/RI
SP-5	ST-4	JP-4 Underground Line Leak	PA/RI
FT-3	FT-5	Fire Protection Training Area No. 3	PA
SP-3	ST-6	JP-4 Underground Line Leak	PA/RI/FS
SP-2	ST-7	JP-4 Tank No. 1319	PA
S-1	ST-8	Waste Oil Storage Tank	PA
D-3	LF-9	General Refuse Disposal Site	PA
D-8	LF-10	Chlorine Gas Cylinder Disposal Site	PA
D-10	LF-11	Hazardous Chemical Burial Mound	PA
S-6	SS-12	Lake Charles Drum Storage Site	PA
FT-2	FT-13	Fire Protection Training Area No. 2	PA
FT-4	FT-14	Fire Protection Training Area No. 4	PA
D-4	LF-15	General Refuse Disposal Site	PA
D-5	LF-16	General Refuse Disposal Site	PA
SP-6	ST-17	CE Tank Spill	PA/RI
SP-7	ST-18	Mogas Underground Tank Leak	PA/RI/FS
RD-1	RW-19	Low-Level Radioactive Waste Disposal Site	PA
RD-2	RW-20	Low-Level Radioactive Waste Disposal Site	PA
-	SS-21	Bulk Fuel Storage Area No. 1	RI/FS
D-2	OT-22	Scrap Metal Disposal Site	PA
-	SS-23	Fire Training Drum Storage Area No. 1	PA/RI
-	SS-24	Fire Training Drum Storage Area No. 2	PA/SI
D-1	OT-25	World War II Bomb Disposal Site	PA
D-6	LF-26	Construction Rubble Disposal Site	PA
D-7	LF-27	Construction Rubble Disposal Site	PA
D-9	LF-28	Horse Stable Disposal Site	PA
D-11	LF-29	Construction Rubble Disposal Site	PA
D-12	LF-30	Construction Rubble Disposal Site	PA
D-13	LF-31	Construction Rubble Disposal Site	PA
D-14	LF-32	Construction Rubble Disposal Site	PA
D-16	LF-33	Ammo Area Disposal Site	PA
D-17	LF-34	Claiborne Air-to-Ground Range Disposal Site	PA
T-1	OT-35	Incinerator	PA
T-2	WP-36	Sewage Lagoon	PA
SP-1	ST-37	Tank Truck Leak	PA
SP-8	SS-38	PCB Transformer Spill	PA
SP-9	SS-39	PD-680 Spill	PA
S-2	SS-40	Pesticide Storage, Building 1210	PA
S-3	SS-41	Pesticide Storage, Building 1703	PA
S-4	SS-42	CE Supply Hazard Storage Yard	PA
S-5	SS-43	DRMO Storage Yard	PA
-	OT-44	Munitions Burial Site	-

Notes: *PA = Preliminary Assessment (or Records Search)
SI = Site Investigation
EA = Environmental Assessment
RI = Remedial Investigation
FS = Feasibility Study

covenant must warrant that "any additional remedial action found to be necessary after the date of transfer shall be conducted by the United States."

The Air Force must complete the IRP for the contaminated sites on England AFB and provide the assurances required by CERCLA §120(h) for all properties transferred. The combination of these requirements may delay parcel disposal and affect reuse. Ongoing activities at identified IRP sites may delay or limit some proposed land uses at or near those sites. Future land uses by the recipient of the property on a site-specific level may be, to a certain extent, limited by the severity of contamination or level of remedial effort required at these IRP sites. Regulatory review as required by Air Force programs will ensure that any site-specific land use limitations are identified and considered.

The Air Force is committed to the identification, assessment, and remediation of contamination from hazardous substances at England AFB. This commitment will assure the protection of public health as well as restoration of the environment. Additionally, the Air Force will work aggressively with the regulatory community to ensure that parcel disposal occurs at the earliest reasonable date so as not to impede the economic redevelopment of the area through reuse of England AFB. Quantification of those delays based on the conceptual plans for all redevelopment alternatives and what is currently known at this stage of the IRP is not possible.

Closure Baseline. The closure of England AFB will not affect ongoing IRP activities. These activities will continue according to federal, state, and local regulations to protect human health and the environment, regardless of the alternative chosen for reuse. IRP activities will continue well past the December 1992 closure date for England AFB. The OL will oversee the coordination of all IRP contractors and ensure that EPA and Louisiana Department of Environmental Quality concerns are addressed and all applicable regulations complied with.

3.3.4 Storage Tanks and Oil/Water Separators

Preclosure Reference. Underground storage tanks (USTs) are subject to RCRA regulations (40 CFR 280), as mandated by the Hazardous and Solid Waste Amendments of 1984. The State of Louisiana has adopted the federal regulations under Louisiana Administrative Code, Title 33, Part XI, Chapter 3, which are administered by the Louisiana Department of Environmental Quality.

England AFB has 36 USTs, 25 of which are active (Table 3.3-6) and 11 are abandoned (Table 3.3-7). Of the 25 active tanks, all but 6 are regulated and permitted. The nonregulated tanks are 50,000-gallon JP-4 storage tanks, associated with the hydrant fueling system in the south aircraft parking apron. These tanks are considered part of the airfield and are, therefore, exempt from regulation under RCRA (40 CFR 280.10(c)(4)). The regulated tanks contain various petroleum products, such as diesel fuel, JP-4, and gasoline, and range in size from 500 to 10,000 gallons.

Table 3.3-6

Inventory of Active Underground Storage Tanks at England AFB

Tank No.*	Capacity (gallons)	Contents	Installation Date	Construction Material
UST-121-1	2,000	JP-4	1962	Steel
UST-121-2	4,000	Diesel	1962	Steel
UST-121-3	1,000	Mogas	1950	Steel
UST-500-1	500	Mogas	1986	Steel
UST-500-2	500	Diesel	1986	Steel
UST-524	500	Mogas	1957	Steel
UST-610	500	Diesel	1983	Steel
UST-1630	500	Diesel	1982	Steel
UST-1710-1	10,000	Diesel	1981	Fiberglass
UST-1710-2	10,000	Mogas	1982	Fiberglass
UST-1710-3	10,000	Mogas	1982	Fiberglass
UST-1710-4	10,000	Diesel	1982	Fiberglass
UST-1800-1	10,000	Mogas	1972	Steel
UST-1800-2	10,000	Unleaded Gas	1972	Steel
UST-1905	500	Diesel	1986	Fiberglass
UST-2508	500	JP-4	1974	Steel
UST-2611-1	50,000	JP-4	1956	Steel
UST-2611-2	50,000	JP-4	1956	Steel
UST-2611-3	50,000	JP-4	1956	Steel
UST-2611-4	50,000	JP-4	1956	Steel
UST-2611-5	50,000	JP-4	1956	Steel
UST-2611-6	50,000	JP-4	1956	Steel
UST-2611-7	4,000	Used Oil	1956	Steel
UST-3016	2,500	Diesel	1985	Steel
UST-3609	5,000	Diesel	1981	Steel

Note: *Tank number indicates building tank is associated with.
Source: Entech, Inc. 1991c.

Table 3.3-7

Inventory of Inactive Underground Storage Tanks at England AFB

Tank No.*	Capacity (gallons)	Content	Installation Date	Construction Material
UST-107-1	500	Diesel	1956	Steel
UST-107-2	Unknown	Unknown	1956	Steel
UST-203	Unknown	Unknown	Unknown	Steel
UST-1800-3	5,000	Mogas	1972	Steel
UST-1800-4	5,000	Unleaded Gas	1972	Steel
UST-2102-1	500	Alkali	Unknown	Plastic
UST-2102-2	500	Mineral Oil	Unknown	Plastic
UST-2102-3	250	Solvent	Unknown	Plastic
UST-2618-1	3,500	JP-4	Unknown	Steel
UST-2618-2	3,500	JP-4	Unknown	Steel
UST-3011	2,500	Diesel	1964	Steel

Note: *Tank number indicates building tank is associated with.

Sources: U.S. *Air Force* 1991b; Entech, Inc. 1991c.

Tank performance standards, operating requirements, monitoring, release reporting, investigation, confirmation, response, and corrective actions are detailed in the *Underground Storage Tank Management Plan, England AFB, Louisiana* (Entech, Inc. 1991c). All of the tanks and their associated piping had leak detection devices installed in July 1990; they are monitored monthly. Soil gas probe samples are taken and analyzed for chemicals which are added as innoculants to the USTs (i.e., DDM tracer and 114B2 tracer) and for total volatile hydrocarbons. Monitoring data for 68 samples collected in March 1992 indicated that no leakage was present for any of the USTs and associated piping (Tracer Research Corporation 1992).

England AFB has 25 active aboveground storage tanks, ranging in size from 200 to 420,000 gallons, which are used to store various petroleum products, including used oil, diesel fuel, JP-4, and gasoline (Table 3.3-8). Most of the aboveground storage tanks are surrounded by a secondary containment system equal to the volume of the storage tank, plus 1 foot of freeboard. The base also has three abandoned and two inactive aboveground storage tanks.

Table 3.3-8

Inventory of Aboveground Storage Tanks at England AFB

Tank No.[1]	Capacity (gallons)	Contents/Status[2]	Installation Date	Construction
AGST-107	500	Diesel (Active)	1956	Steel
AGST-206	2,000	Diesel (Active)	1972	Steel
AGST-215	300	Diesel (Active)	1950	Steel
AGST-405	300	Diesel (Active)	1953	Steel
AGST-500-1	300	Diesel (Active)	1986	Steel
AGST-500-2	200	Used Oil (Active)	1986	Steel
AGST-1303-5	168,000	Aviation Gas (Abandoned)	1950	Steel
AGST-1309-12	360,000	JP-4 (Active)	1953	Steel
AGST-1319-13	336,000	JP-4 (Active)	1957	Steel
AGST-1320-14	420,000	JP-4 (Inactive)	1957	Steel
AGST-1320-15	420,000	JP-4 (Active)	1957	Steel
AGST-1330	25,000	Diesel (Active)	1950	Steel
AGST-1331	25,000	Diesel (Active)	1950	Steel
AGST-1332	12,000	Mogas (Inactive)	1950	Steel
AGST-1434	500	Used Oil (Active)	1952	Steel
AGST-1720	1,500	Diesel (Active)	1989	Steel
AGST-1800	500	Used Oil (Active)	1972	Steel
AGST-1803	300	Diesel (Abandoned)	1960	Steel
AGST-1910	500	Diesel (Active)	1968	Steel
AGST-2325	500	Diesel (Active)	1983	Steel
AGST-2618	20,000	Used Oil (Abandoned)	1967	Steel
AGST-3004	500	Diesel (Active)	1972	Steel
AGST-3006	500	Diesel (Active)	1970	Steel
AGST-3015	300	Diesel (Active)	1978	Steel
AGST-3018	300	Diesel (Active)	1978	Steel
AGST-3026	750	Diesel (Active)	Unknown	Steel
AGST-3036	300	Diesel (Active)	1982	Steel
AGST-3052	300	Diesel (Active)	1978	Steel
AGST-3061	300	Diesel (Active)	1978	Steel
AGST-3509	300	Diesel (Active)	1971	Steel

Notes: [1]Tank number indicates building tank is associated with.
[2]Status as of January 1992.

Source: U.S. Air Force 1992f.

The largest tanks store JP-4 jet fuel and are maintained by the Fuels Management Group in the POL area. These bulk storage tanks are supplied by tanker trucks. In the past, JP-4 was shipped to the base by 10,000-gallon rail tanker cars.

England AFB has 26 oil/water separators ranging in size from small 50-gallon closed-top units and grit chambers to a 20,000-gallon closed-top separator associated with an aircraft engine test cell (Table 3.3-9). All of the oil/water separators are connected to the sanitary sewer system. The separators are all cleaned periodically, including steam cleaning, depending on their use.

Table 3.3-9

England AFB Oil/Water Separators

Unit No.*	Description
OWSEP-120	Aerospace Ground Equipment Shop 50-Gallon Closed Top
OWSEP-500-1	Fire Department 4,400-Gallon Closed Top
OWSEP-500-2	Fire Department 50-Gallon Grit Chamber
OWSEP-525-1	Aircraft Hangar 4,000-Gallon Open Top
OWSEP-525-2	Aircraft Hangar 4,000-Gallon Open Top
OWSEP-529	Accumulation Point 100-Gallon Open Top
OWSEP-818	Lift Station Grease Separator (Capacity Unknown)
OWSEP-1108	Water Tower Washrack 300-Gallon Open Top
OWSEP-1434-1	Auto Hobby Shop 700-Gallon Closed Top
OWSEP-1434-2	Auto Hobby Shop 150-Gallon Open Sump
OWSEP-1437-1	Car Wash 100-Gallon Grit Chamber
OWSEP-1437-2	Car Wash 100-Gallon Grit Chamber
OWSEP-1437-3	Car Wash 100-Gallon Grit Chamber
OWSEP-1707	Vehicle Maintenance Washrack 2,800-Gallon Closed Top
OWSEP-1711	Vehicle Maintenance Washrack 2,800-Gallon Closed Top
OWSEP-1714	Civil Engineering Washrack 50-Gallon Grit Chamber
OWSEP-1800	Base Service Station 200-Gallon Closed Top
OWSEP-2102	Propulsion Hangar 100-Gallon Closed Top
OWSEP-2108	Weapons Shop 200-Gallon Closed Top
OWSEP-2401	Refueling Vehicle Maintenance Shop 860-Gallon Closed Top
OWSEP-2402	Refueling Vehicle Washrack 6,200-Gallon Open Top
OWSEP-2409	Fire Training Facility 3,200-Gallon Closed Top
OWSEP-2525	Aircraft Washrack 8,500-Gallon Open Top
OWSEP-2612	Aircraft Engine Test Stand 750-Gallon Closed Top
OWSEP-2618-1	Test Cell 20,000-Gallon Closed Top
OWSEP-2618-2	Test Cell 100-Gallon Closed Top

Note: *Unit number indicates facility oil/water separator is associated with.
Source: U.S. Air Force 1992f.

Closure Baseline. All USTs will be tested as part of the base disposal process. USTs that meet Louisiana Department of Environmental Quality regulations (Louisiana Administrative Code, Title 33, Part XI) may be left in place to support reuse activities. USTs that have failed a precision leak test will be closed as required by the Louisiana Department of Environmental Quality. The aboveground storage tanks will be purged and cleaned to minimize fire hazards. The oil/water separators will be steam-cleaned prior to base closure.

3.3.5 Asbestos

Asbestos-containing material (ACM) remediation is regulated by the EPA and the Occupational Safety and Health Administration (OSHA). Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The Toxic Substances Control Act (TSCA) and the Asbestos Hazard Emergency Response Act (AHERA) provide the regulatory basis for handling asbestos-containing building materials (ACBM) in kindergarten through 12th grade school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACBM.

The State of Louisiana also has regulations pertaining to ACM remediation. Prior to removal and disposal of asbestos from any building, an Asbestos Disposal Verification Form must be filed with the Louisiana Department of Environmental Quality.

Renovation or demolition of buildings with ACBM has the potential to release asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage of various building materials, such as pipe and boiler insulation, acoustical ceilings, sprayed-on fire-proofing, and other materials used for sound proofing or insulation. The NESHAP regulations address the demolition or renovation of buildings with ACM.

There are two primary categories describing ACM. Friable ACM is defined as any material containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Appendix A, Subpart F, Section 1, polarized light microscopy that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM are those materials which contain more than 1 percent asbestos, but do not meet the rest of the criteria for friable ACM.

Preclosure Reference. The current Air Force practice is to manage or remove ACM in active facilities and remove ACM, according to regulatory requirements, prior to facility demolition. Removal of ACM occurs when there is the potential for asbestos fiber release that would affect the environment or human health. The Air Force policy concerning the management of asbestos at closing bases is presented in Appendix G.

The *England Air Force Base Asbestos Management Plan* (Stavich 1991) documents policies and procedures regarding the control of health hazards created by ACM. The Base Civil Engineer is ultimately responsible for the implementation of the management plan. The Environmental Management Branch acts as the Asbestos Program Manager while the Asbestos Program Office is the major element in the asbestos control program. The Deputy Chief of Operations is the Asbestos Operations Manager. Other responsible base organizations involved in the asbestos program include Supervisors and Craftsmen, Design Engineering, Real Property Section, Bioenvironmental

Engineer, Environmental Legal Advisor, Safety Office, Public Affairs, and Security Police.

Results of the basewide asbestos survey are recorded in the England AFB Asbestos Register, the major element of the management plan. The Asbestos Register provides a permanent record of ACM location, status, and a description of the ACM found. A total of 218 buildings on England AFB were surveyed for asbestos. The survey included all buildings on the base except those that, because of their construction materials, were not expected to contain asbestos. Asbestos was detected in 90 of the 218 buildings surveyed (U.S. Air Force 1992b). As of May 1992, results were pending on seven buildings.

Closure Baseline. Asbestos will be removed as necessary to protect human health. Beyond that, an analysis will be conducted to determine the cost-effectiveness of removing ACM versus devaluing the property prior to reuse. ACM will be removed if a building is, or is intended to be, used as a school or child-care facility. Exposed friable asbestos will be removed according to applicable health laws, regulations, and standards if a health hazard exists.

3.3.6 Pesticides

The Federal Insecticide, Fungicide, and Rodenticide Act of 1972, as amended, is the federal legislation controlling the use of pesticides. Pesticide management activities are subject to federal regulations contained in 40 CFR 162, 165, 166, 170, and 171, and Louisiana regulations contained in Louisiana Administrative Code, Title 33, Part V, and the Louisiana Pesticide Law.

Preclosure Reference. Pest management at England AFB is performed by the Base Civil Engineering staff, through the entomology shop in Building 1704. Pest management activities at the base include pest control in buildings (e.g., for ants, roaches, wasps, and mosquitoes) and vertebrate pest control (e.g., for rats, mice, and snakes). The base entomologist is also responsible for vegetation control (e.g., weeds) on base property.

The England AFB Pest Management Program is conducted in accordance with DOD guidelines and Air Force Regulation (AFR) 91-21. The entomologist provides professional oversight for the England AFB program through biennial onsite pest management reviews, annual approvals of base pesticide products listed in the Pest Management Plan, and quarterly reviews of actual pesticide usage. The base pest management program is conducted under the day-to-day supervision of DOD-certified pesticide applicators. The base entomologist also performs pest management services at the Cotile Lake Recreation Area, Lake Charles Radar Site, and the U.S. Naval Reserve facility in downtown Alexandria.

A variety of chemicals are used at England AFB to control pest infestations and ground foliage. Approximately 500 gallons and 3,000 pounds of assorted fungicides, rodenticides, and herbicides are stored in Building 1704. An annual inventory of pesticides used at the base is presented in Table 3.3-10. Pesticides are stored at the base entomology shop and purchased on an as-needed basis every 3 months; thus, the quantity on hand at any one time is relatively small.

Table 3.3-10

Pesticide Inventory at England AFB Prior to Closure

Name	Quantity	Unit
Dursban 4 E	4	gallons
Ficam Plus	11	boxes
Ficam	3	pounds
Sevin WP	0*	pounds
Red Panther Dormant Oil	10	gallons
Max Force	5	cases
888 Deodorant	0.5	gallons
Malathion, 57% EC	8	gallons
Lindane Dust	100	pounds
Kelthane EC	7	gallons
Pyronyl Oil Concentrate	8	gallons
Perma-Dust	6	cans
Diazinon 500	0*	cans
Dursban TC	6	gallons
Amdro	0*	bags
Oftanol Granular	0*	pounds
Ortho Hornet and Wasp Killer	48	cans
Avitrol	10	pounds
PT 565 Plus	120	cans
Zinc Phosphide	8	bottles
Gator Roach Hives	2	boxes
Diazinon 4 E	1	gallon
Sevin Dust	75	pounds
Benlate	20	pounds
Baygon	3.5	gallons
Deet Repellent	40	2 oz. bottles
Off Repellent	5	cans
Phostoxin	20	flasks
Final	6	pounds
Octagon Rodenticide	20	pounds
Bagon Bait	2	pounds
Malathion, 95%	50	gallons
(PDB) Para Dichlorobenzene	2	pounds
D-Phenothrin	100	cans
Combat Roach Killer	3	cases
Strike Roach Traps	10	cartons
Trac	25	pounds
Talon G	30	pounds
Flytek	5	pounds

Table 3.3-10, Continued

Name	Quantity	Unit
Lure-Stik	2	sticks
Diquat	3	gallons
Round-Up	1	gallon
Penetrate	5.5	gallons
Pre-San 12.5	200	pounds
Pro-Grass	4	gallons
Pro-Turf	100	pounds
MSMA, 20% (3# AI per gal)	180	gallons
MSMA, 47% (6# AI per gal)	160	gallons
Rodeo	0*	gallons
Rubigan	5	gallons
Image	2	gallons
Sencor	0	gallon
Dacthal-W-75	48	pounds
Princep 80 W	55	pounds
Mecomec	15	gallons
Pramitol 25 E	50	gallons
Gramoxone (Paraquat)	4	gallons
Neptune (Surfactant)	35	gallons
Traxit	0.5	gallon
2-4-D Amine	4	gallons
Dalapon	75	pounds
Retard	10	gallons

Note: *Substances listed with zero quantity are approved for use, but were not in stock at the time of the inventory (July 8, 1991).

Source: U.S. Air Force 1991d.

In addition, pesticides are also used by the golf course under the supervision of a DOD-certified applicator. Pesticides for golf course use are stored in Building 1704.

Closure Baseline. *At the time of closure,* a limited amount of pesticides will continue to be used by the OL for pest management and grounds maintenance.

3.3.7 Polychlorinated Biphenyls

Commercial PCBs are industrial compounds produced by chlorination of biphenyls. PCBs persist in the environment, accumulate in organisms, and concentrate in the food chain. PCBs are used in electrical equipment, primarily in capacitors and transformers, because they are electrically nonconductive and stable at high temperatures.

Disposal of these compounds is regulated under the TSCA, which banned the manufacture and distribution of PCBs with the exception of PCBs used in enclosed systems. By definition, PCB equipment contains 500 parts per million (ppm) PCBs or more, whereas PCB-contaminated equipment contains concentrations equal to or greater than 50 ppm but less than 500 ppm. EPA regulates the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

Preclosure Reference. Beginning in 1981, a comprehensive inventory of all transformers on England AFB was conducted. Samples were collected from all transformers located on the base and analyzed for PCB content. All PCB transformers and all PCB-contaminated transformers were removed and properly disposed of, or in some cases, had their dielectric fluid changed and flushed so that the equipment contained less the 50 ppm PCBs (the level considered PCB-contaminated). Since 1986, the base has had no PCB transformers or PCB-contaminated transformers. A number of PCB-containing capacitors in the starting units of air conditioning systems in several buildings on the base were recently identified. The capacitors have been reported to the EPA and will be removed prior to base disposal.

Closure Baseline. There will be no federally regulated PCB or PCB-contaminated transformers on the base at the time of base closure. The 12 PCB-containing capacitors will be managed in accordance with applicable regulations (40 CFR 761).

3.3.8 Radon

Radon is a naturally occurring, colorless and odorless radioactive gas that is produced by radioactive decay of naturally occurring uranium. Uranium decays to radium of which radon gas is a by-product. Radon is found in high concentrations in rocks containing uranium, such as granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations. Radon that is present in soil, however, can enter a building through small spaces and openings, accumulating in enclosed areas, such as basements. The cancer risk caused by exposure, through the inhalation of radon, is currently a topic of concern.

Currently, there are no federal or state standards regulating radon exposure; however, the EPA has published guidelines in *A Citizen's Guide to Radon - What It Is and What To Do About It* (1988). Air Force policy requires implementation of the Radon Assessment and Mitigation Program (RAMP) to determine levels of radon exposure of military personnel and their dependents. The EPA has made testing recommendations for both residential structures and schools. Tests on residential structures use a 2- to 7-day charcoal canister test. If levels between 4 and 20 picoCuries per liter (pCi/l) of air are detected, additional screening should be done within a few years. For levels of 20 to 200 pCi/l, additional confirmation sampling should be accomplished within a few months. If the level is in excess of 200 pCi/l, the structure should be evacuated immediately. A 2-day charcoal canister test is used for schools; if readings are 4 to 20 pCi/l, a 9-month school year survey is required. Air Force policy requires a detailed radon assessment program for levels of 4 pCi/l or greater. The recommended radon surveys and action levels are summarized in Table 3.3-11.

Table 3.3-11

Recommended Radon Surveys and Mitigations

Structure	Threshold	Remarks
Residential	4 to 20 pCi/l	Additional screening. Expose detectors for 1 year. Reduce radon levels within 3 years if confirmed high readings exist.
Residential	20 to 200 pCi/l	Perform follow-up measurements. Expose detectors for no more than 6 months.
Residential	Above 200 pCi/l	Follow-up measurements. Expose detectors for no more than 1 week. Immediately reduce radon levels.
	Two-Day Weekend Measurement	
School	4 to 20 pCi/l	Confirmatory 9-month survey. Alpha track or ion chamber survey.
School	Greater than 20 pCi/l	Diagnostic survey or mitigation.

Note: Congress has set a national goal for indoor radon concentrations of less than 0.7 pCi/l.
Source: Environmental Protection Agency 1988.

Preclosure Reference. The England AFB Bioenvironmental Engineering Office conducted radon testing in 35 facilities between December 1987 through February 1988. Thirty family housing units, four dormitories, and the child care center were sampled. The average indoor concentration for the base during this time was 1.1 pCi/l, with the highest value recorded being 2.8 pCi/l (U.S. Air Force 1989). No detailed assessment survey was needed and mitigation activities were not necessary or advised.

Closure Baseline. No further action is required in regard to radon testing or mitigation at England AFB.

3.3.9 Medical/Biohazardous Waste

Preclosure Reference. The England AFB Hospital provides medical services to active military and their dependents, as well as retirees and their dependents. The hospital produces approximately 500 pounds of medical/biohazardous wastes per month. The wastes, including infectious waste, expired drugs, syringes, body fluids, spent chemical reagents, and some wastepaper, are burned in the incinerator at the base hospital (Building 3509) following sterilization in an autoclave. Some wastes (e.g., certain controlled substances) are taken to Rapides General Hospital in downtown Alexandria for incineration in that hospital's hazardous waste-approved incinerator.

Medical and dental X-ray operations at the hospital and the base photo lab (Building 1009) produce photochemical wastes (spent fixer used to remove silver from film) which are passed through silver recovery units prior to discharge into the sanitary sewer system. The units use a cartridge filter to recover the silver, and when the cartridge is full, it is replaced and turned into DRMO for recycling.

Closure Baseline. The hospital will be inactivated in November 1992 and no medical/biohazardous waste will be generated at the time of base closure. Existing biohazardous and photochemical waste will be processed and removed prior to closure according to applicable regulations.

3.4 NATURAL ENVIRONMENT

This section describes the affected environment for the following natural resources: soils and geology, water resources, air quality, noise, biological resources, and cultural and paleontological resources.

3.4.1 Soils and Geology

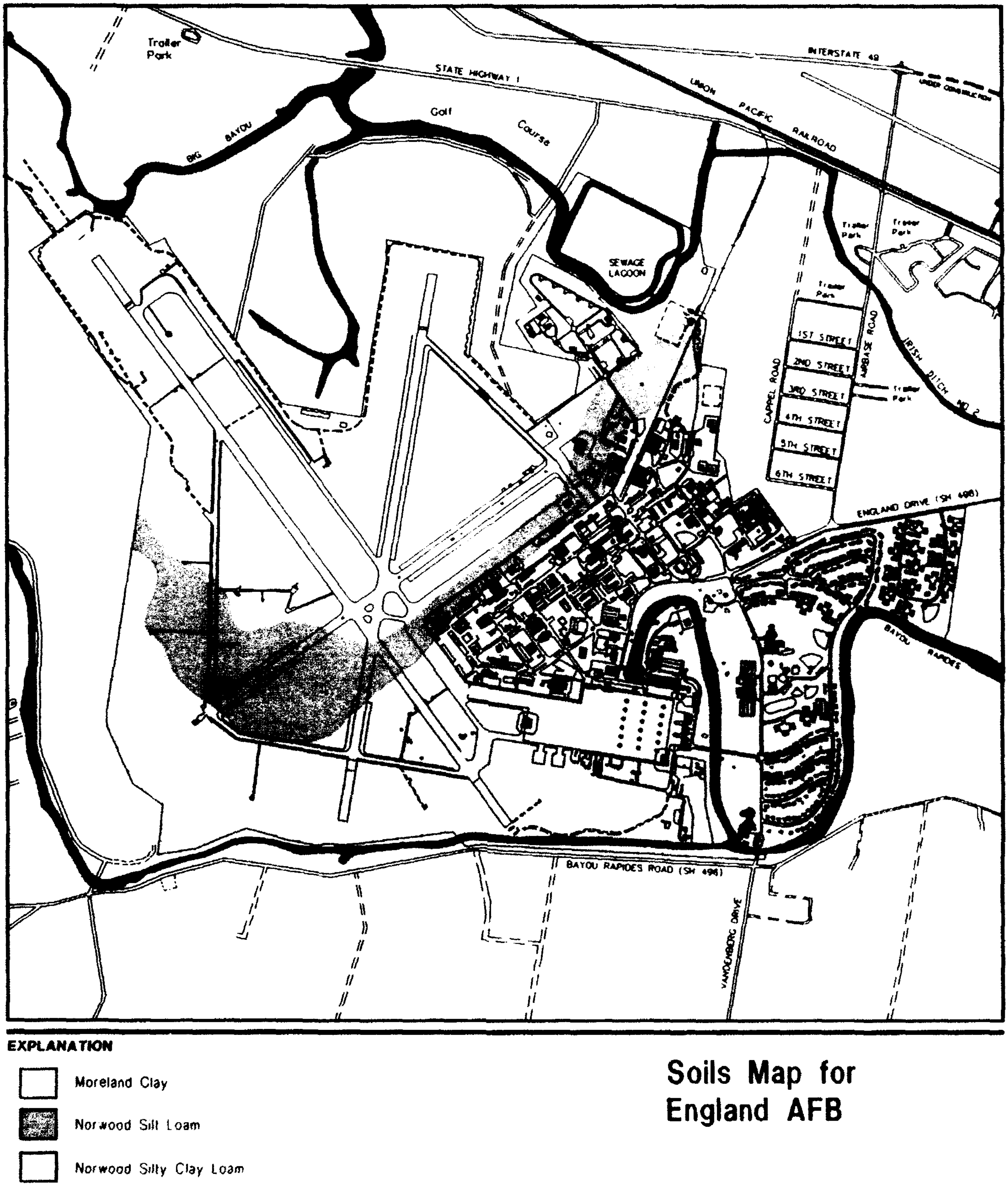
The ROI for soils and geology includes England AFB and portions of the Red River Valley, extending approximately 5 miles beyond the base boundary.

3.4.1.1 Soils

Soils at England AFB and in the vicinity belong to the Norwood Association, which consists of well-drained, nearly level, alkaline, loamy soils of the Red River bottoms (Figure 3.4-1). The Norwood Association includes soils of the Moreland and Norwood series. These soils generally have high natural fertility, a rather high pH, and high phosphate content. Both the Norwood and Moreland series soils are classified as prime farmland by the U.S. Department of Agriculture, Soil Conservation Service (SCS). However, the land within the base is not considered prime or unique farmland because it is already in urban development and has been for at least 10 years (Austin 1992).

Of the 2,282 acres on the base, only 47 acres contain soils in more or less undisturbed condition. In pristine times, the soils of England AFB supported a typical bottomland hardwood forest (Noble 1986).

The Moreland Series occurs primarily in the northern portion of the base at the lower elevations. These soils are somewhat poorly drained and very slowly permeable, with a clayey subsoil. They were formed in clayey alluvial sediment. The surface layer is typically a dark, reddish-brown clay approximately 12 inches thick. Subsoil extends to a depth of 64 inches and is a dark, reddish-brown silty clay with a few gray mottles.



Soils Map for England AFB

Source: USDA SCS and U.S. Forest Service 1980

Figure 3.4-1

The Norwood Series occurs in the southern portion of the base. It consists of well-drained, moderately permeable, loamy soils that are found on natural levees of the Red River alluvial plain, especially along those adjacent to Bayou Rapides. The surface layer is a reddish-brown silt loam about 6 inches thick. The underlying material is stratified with a reddish-brown silt; calcareous, very fine sandy loam; silt loam; and silt clay loam subsoil.

Three major soil types within the two soil series occur on the base: Moreland clay, Norwood silt loam, and Norwood silty clay loam.

The Moreland clay is a nearly level, somewhat poorly drained clayey soil of the Red River alluvial plain on slopes ranging from zero to 1 percent. Runoff is slow, and water moves slowly through the soil; it can be worked only over a narrow range of moisture conditions. The water table occurs at depths of 1 to 3 feet from December through April. During dry periods, cracks may form in the soil which seal over during wet periods. The soil is hard when dry and sticky when wet. The main limitations of the Moreland clay are wetness, low strength, and a very high shrink-swell potential. This soil covers approximately 775 acres on England AFB and is in SCS Capability Class IIIw-5 (i.e., soils that are severely limited for cultivation because of excess water).

The Norwood silt loam is a well-drained, loamy soil with slopes up to 1 percent. This soil is one of the first on the Red River alluvial plain to dry out in the spring. Movement of water and air through the soil is moderate, so that roots penetrate easily. Following heavy rains, water often remains in low areas for a short period of time. The water table is deeper than 6 feet from December through April, but may be 2 to 6 feet in some locations. The Norwood silt loam has no significant limitations. It covers approximately 375 acres on England AFB and is in SCS Capability Class I-1 (i.e., soils that have few limitations that restrict their use).

The Norwood silty clay loam is very similar to the Norwood silt loam in that it is well-drained, loamy, and has slopes up to 1 percent. Runoff is slow, and moderate movement of water and air through the soil is characteristic. Excess surface water accumulates after significant rainfall. The water table is generally below a depth of 6 feet from December through April, although it sometimes occurs between 1.5 and 6 feet. Wetness is the main limitation associated with this soil type. The Norwood silty clay loam covers approximately 1,130 acres on England AFB and is in SCS Capability Class IIw-2 (i.e., soils moderately limited because of excess water).

Various soil properties and engineering and other use limitations are summarized in Table 3.4-1.

Table 3.4-1

Soil Properties and Interpretations for Engineering and Other Selected Uses

	Moreland Clay	Norwood Silt Loam	Norwood Silty Clay Loam
Soil Properties:			
Permeability (inches per hour)	<0.2	0.6 - 2.0	0.6 - 2.0
Available Water Capacity (inches per inch of soil)	0.18 - 0.21	0.17 - 0.22	0.17 - 0.22
pH	6.6 - 8.4	6.6 - 8.4	6.6 - 8.4
Corrosivity to Uncoated Steel and Concrete	High	High	High
Shrink-Swell Potential	Moderate to very high	Low	Low
Wetness Hazard[1]	Moderate	None	None
Flooding Hazard	Slight	Slight	Slight
Engineering Limitations (Degree and Kind)[2]:			
Dwellings Without Basements	Severe: shrink-swell; low strength; wet	Moderate: low strength	Moderate: low strength
Septic Tank Absorption Fields	Severe: slow percolation; wet	Moderate: slow percolation	Moderate: slow percolation
Sewage Lagoons	Slight	Moderate: seepage	Moderate: seepage
Sanitary Landfill (Trench Type)	Severe: too clayey; wet	Moderate : too clayey	Moderate: too clayey
Picnic and Camp Areas	Severe: too clayey; slow percolation; wet	Slight	Moderate: too clayey
Playgrounds	Severe: too clayey; slow percolation; wet	Slight	Moderate: too clayey
Local Roads and Streets	Severe: shrink-swell; low strength; wet	Moderate: low strength	Moderate: low strength
Small Commercial Buildings	Severe: shrink-swell; low strength; wet	Moderate: low strength	Moderate: low strength
Pond Reservoir Areas	Slight	Moderate: seepage	Moderate: seepage
Embankments, Dikes, and Levees	Moderate: compressible; low strength; shrink-swell	Moderate: piping; erodes easily	Moderate: piping; erodes easily
Shallow Excavations	Severe: too clayey; wet	Slight	Slight
Suitability as a Source of:			
Topsoil	Poor: too clayey	Good	Fair: too clayey
Roadfill	Poor: low strength; shrink-swell	Fair: low strength	Fair: low strength
Highway Base	Not suitable	Poor to not suitable	Poor to not suitable
Soil Cement Base	Very poor to not suitable	Poor to very poor	Poor to very poor
Predicted Average Acre Yields of Principal Crops[3]:			
Cotton (pounds of lint)	625	875	775
Rice (bushels)	130	-[4]	-[4]
Corn (bushels)	-[4]	90	85
Soybeans (bushels)	37	40	40
Grain or Sorghum (bushels)	90	90	90
Sugar Cane (tons)	30	35	35

Notes: [1]Wetness hazard refers to estimate of length of time free water stays in soil after the saturation point has been reached.
[2]Slight refers to soil properties generally favorable to rated use (i.e., limitations that are minor and easily overcome). Moderate means that soil properties are unfavorable but can be overcome or modified by special planning and design. Severe refers to soil properties so unfavorable and so difficult to correct or overcome that they require major soil reclamation, special designs, or intensive maintenance.
[3]Predicted average acre yields under high-level management.
[4]Crop not suited to soil or is not commonly grown on soil.

Source: U.S. Department of Agriculture, Soil Conservation Service and U.S. Forest Service 1980.

3.4.1.2 Physiography and Geology

England AFB is located in the Red River Valley subdivision of West Gulf Coastal Plain Physiographic Province. Structurally, it lies in the Mississippi Embayment. The general direction of the dip of sediments in the region is south-southeast, with thickening of units toward the Gulf of Mexico.

The topography of England AFB and surrounding portions of the Red River Valley is level to gently sloping. Streams have developed nearly level, broad floodplains. The most prominent visual feature of the region consists of the dissected terraces flanking the valley, which are the remnants of former floodplains. Valley elevations range from 40 feet above MSL in Avoyelles Parish (east of the base) to 205 feet near Shreveport (northwest of the base). Outside the valley in Rapides Parish, surface elevations reach a maximum of 310 feet above MSL.

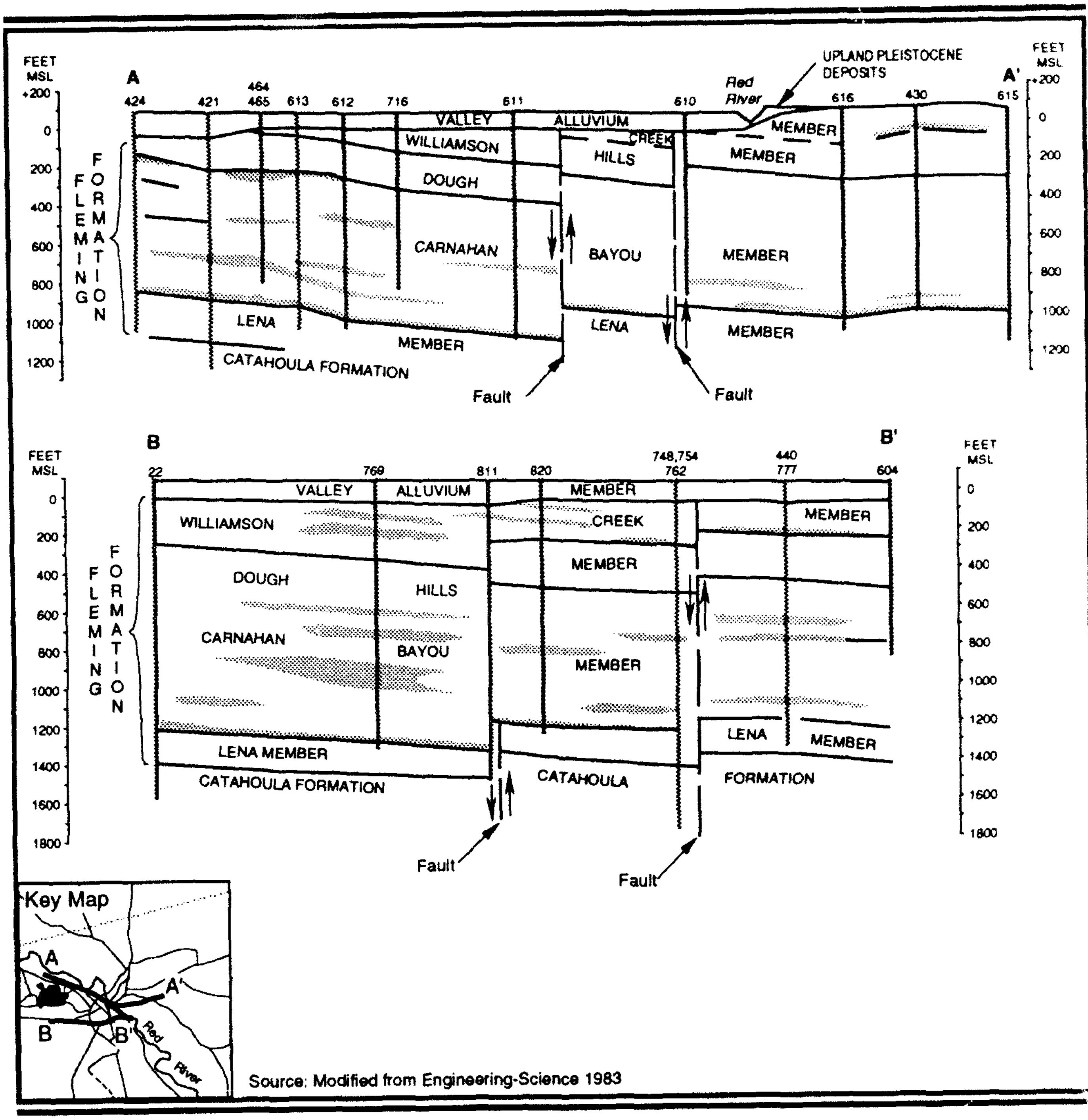
In Rapides Parish, elevation change is greatest in the Kisatchie Hills south of the base, where it approaches 100 feet. At England AFB, surface elevations vary from 75 feet above MSL in the drainage channel adjacent to the golf course to 90 feet above MSL along the western boundary. Changes in elevation are seldom more than 5 feet and normally occur as a gentle slope. The greatest variation in elevation is along major water courses, such as Bayou Rapides.

Geologic units in the region include the alluvium of the Red River Valley and the underlying unconsolidated to semi-consolidated Miocene clays, silts, sands, and gravels. Cretaceous clays, silts, sands, gravels, marls, shales, and sandstones lie below the Miocene.

The alluvium consists of generally poorly sorted, unconsolidated clay, silt, and sand with some local accumulations of gravel. The greatest observed thickness is approximately 120 feet in a well on the base (Engineering-Science 1983). Results of soil borings indicate that the shallow alluvial soils (less than 15 feet below ground surface) are predominantly silts, clays, and sandy silts; coarser materials are present at depth.

Immediately underlying the alluvium are Miocene deposits that consist primarily of unconsolidated clays, silts, sands, and gravels, with some interbedded lenses of consolidated materials. The entire sequence is from 500 feet thick in the northwest part of Rapides Parish to 5,300 feet thick in the southeast corner (Engineering-Science 1983).

The Miocene section is divided into the Fleming Formation and the underlying Catahoula Formation. These, in turn, are subdivided into various members (Figure 3.4-2). Outcrops of Miocene units are limited to the valley walls of deeply cut streams and to an area of about 100 square miles in the northwest portion of the parish.



LEGEND

Approximate Extent of Significant Water-Yielding Sand Beds

22 U.S. Geological Survey Number and Rapides Parish Water Well

0 2500 5000 10000 FEET

Geologic Cross-Sections In the Vicinity of England AFB

Figure 3.4-2

The Miocene beds are predominantly sands interbedded with thinner clay units. The thickest clay section is a 300-foot-thick unit at the base of the Fleming Formation. Generally, sandy members are fairly well sorted, with few fine sediments.

Structural features of the area consist of normal faults that are probably the result of sediment loading and associated subsidence. Two north-trending faults cutting the Miocene sediments have been mapped through the Alexandria area approximately 2 to 3 miles east of the base (Figure 3.4-2). These faults may offset water-bearing units, disrupting the movement of groundwater.

Mineral resources in the vicinity of England AFB are limited to sand and gravel aggregate. Concrete is produced in the Alexandria area; only the aggregate is mined locally, mostly from the terrace deposits to the south. The near-surface materials at England AFB and the ROI are too fine-grained for use as aggregate.

Oil and gas fields are located approximately 25 miles to the east, northeast, and southeast of England AFB. The oil and gas potential of the base and the ROI is estimated to be low. The only salt dome in Rapides Parish is 25 miles to the southeast; it has active oil production (Louisiana Geological Survey 1980).

England AFB is located in Seismic Zone 0 (Uniform Building Code 1991), the zone of lowest seismic risk. There is no evidence of past tectonic movement in the area for millions of years. Post-Miocene fault movements in the England AFB/Alexandria area were local and non-tectonic; there is no evidence of recent movement. Seismic risk in the area is minimal, and the area is free of geological hazards. Liquefaction potential is minimal because of the low seismicity and absence of other destabilizing geological factors in the area.

3.4.2 Water Resources

The ROI for water resources includes England AFB and the portions of the Red River Valley extending approximately 5 miles beyond the base boundary. England AFB and the ROI are not located in a coastal area. No streams in the ROI are designated as wild and scenic. Rapides Parish receives an average annual rainfall of 57.68 inches. A maximum monthly average of 6.38 inches falls in May and a minimum of 2.6 inches in September (Stephens 1988).

3.4.2.1 *Surface Water*

England AFB is located on the broad (approximately 10 miles wide) floodplain of the Red River, a major tributary of the lower Mississippi River. The floodplain receives direct precipitation as well as runoff from small streams that flow onto it from the slopes of hills bordering the river valley. The England AFB area is drained by Bayou Rapides, Big Bayou, and their tributaries. Big Bayou lies just outside the northern boundary of the base, and Bayou Rapides forms the southern boundary (Noble 1986).

England AFB contains two surface waterbodies: Tiger Lagoon and Le Tig Pond (Figure 3.4-3). Tiger Lagoon is a 46-acre pond on the north side of the base that was formerly used as a sewage disposal and treatment lagoon. It has been inactive since 1982. Le Tig Pond, covering approximately 1 acre, is located on the base golf course near the Back Gate. Le Tig Bayou occupies the depression adjacent to the pond and connects with Bayou Rapides (Cook 1991a).

Perennial streams in the immediate area include Big Bayou and Bayou Rapides. Big Bayou is connected with Bayou Rapides by way of Irish Ditch No. 2, northeast of the base. Small, intermittent drainages are tributary to the bayous. The Red River is the major river in the area and lies approximately 1 mile north of the base. All other streams of the ROI are tributary to it.

Portions of the base are within the 100-year floodplains of Big Bayou and Bayou Rapides (Federal Emergency Management Agency 1986). The floodplain areas are located primarily along the bayous and drainages across the northern and southern portions of the base (Figure 3.4-3).

Le Tig Bayou, which feeds directly into Bayou Rapides, is a "water of the United States" and is subject to Section 404 of the Clean Water Act. Any discharge of dredged or fill material into Le Tig Bayou would require a permit from the U.S. Army Corps of Engineers (COE) (Cook 1991a). A determination made by the COE (1990), valid until October 1993, holds that only Big Bayou and Bayou Rapides are jurisdictional wetlands and subject to Section 404 protection.

Surface Water Quality. The Louisiana Department of Environmental Quality has the primary regulatory responsibility for maintaining water quality within the state, assigning stream classifications for all state waters, and adopting applicable standards for these waters. No discharges to surface water other than runoff into the two bayous are made by the base. Big Bayou and Bayou Rapides are designated as general use waters, suitable for aquatic life habitat, agricultural or industrial water supply, and recreation (U.S. Air Force 1990b).

Quarterly water quality monitoring is performed at a number of sites on the base to ensure that the surrounding waterways meet state water quality standards (U.S. Air Force 1988) (Figure 3.4-3). Sample Site 1 is just upstream of the base boundary on Big Bayou. Sample Site 2 is a drainage ditch that drains the northeastern section of the base and flows north into Big Bayou. Sample Site 3 is located at the point where Big Bayou crosses the base boundary to the northeast. Sample Site 4 is in the southwestern corner of the base on the upstream section of Bayou Rapides. Sample Site 5 is the golf course drainage ditch to the southeast, and samples from Sample Site 6 are taken at the eastern boundary of the base on the downstream section of Bayou Rapides. Water quality for Big Bayou and Bayou Rapides is fair to good; however, on several occasions, some standards are exceeded in the streams and the drainage ditches. Total dissolved solids and dissolved oxygen are the criteria exceeded most frequently (U.S. Air Force 1988-1991).

EXPLANATION

Surface Water Flow Direction

Water Monitoring Point

100-Year Floodplain

0 500 1000 2000 Feet

Surface Water Hydrology at England AFB

Figure 3.4-3

3.4.2.2 Surface Drainage

Big Bayou and Bayou Rapides, which are the principal drainageways on the base, are former channels of the Red River but are now separated from it by natural levees.

Streams in the ROI flow in a generally eastward direction to the Red River. Water velocity is very slow because of the minimal gradients in the bayous and smaller watercourses. The bayous generally follow meandering courses. The areas immediately adjacent to the streams are characterized by natural levees, backwater swamps, and seasonally flooded zones (Walk, Haydel & Associates, Inc. 1992b).

Drainage off the base is directed by diversion structures and channels toward Bayou Rapides on the south and Big Bayou on the north (Engineering-Science 1983). Intermittent streams and ditches, overland surface drainage directions, and the 100-year floodplain are shown on Figure 3.4-3.

Stormwater drainage originating in the northern, northeastern, and western portions of England AFB enters Big Bayou to the north via small drainage ditches and direct runoff. Drainage into Big Bayou eventually reaches Bayou Rapides by way of Irish Ditch No. 2. The southern and southeastern parts of the base are also drained by small ditches that flow south into Bayou Rapides.

3.4.2.3 Groundwater

England AFB is located within the Red River Valley of the Lower Mississippi Valley water resources region. In the ROI, the two major potential sources of groundwater supplies are the Red River alluvium and the sands of the Miocene sedimentary units.

On England AFB, the water table in the alluvial aquifer averages 10 feet below ground level, and the general flow direction is northeast toward the Red River. Except when the river is at flood stage, the alluvial aquifer discharges to the Red River. At flood stage, the hydraulic gradient may be temporarily reversed.

Flow in the Miocene sands under England AFB is largely toward the cone of depression caused by pumpage at the well field just north of the base. As a result of the pumpage, natural discharge both to the southeast and upward into the alluvium has been reduced.

Recharge of the alluvium occurs primarily by precipitation falling on exposed portions of the unit. The alluvium also receives recharge from adjacent upland Pleistocene terrace sands and from underlying Miocene units. Recharge received from the Pleistocene terrace moves under the influence of gravity to the alluvium where hydraulic pressures decrease. In some areas, additional recharge is transmitted upward under artesian (confined) pressure to the alluvium from the Miocene. Prior to the development of Miocene aquifers for water resources, all valley alluviums received some recharge from the Miocene.

The Red River Valley alluvium forms a significant aquifer in the Alexandria area and occurs at or near the ground surface at England AFB. Groundwater occurs at shallow depths in the alluvium under generally unconfined but occasionally confined conditions. Regional groundwater studies conducted by the U.S. Geological Survey on the Red River Valley alluvium show permeabilities in the range of 750 to 2,000 gallons per day per square foot (gpd/ft^2) and transmissivities in the range of 14,000 to 100,000 gpd/ft^2. A coefficient of storage of 0.0002 is given for the aquifer (Walk, Haydel & Associates, Inc. 1992b).

The Miocene sand aquifers were originally confined, and most of the discharge from them was directed upward into the overlying alluvial aquifer by artesian pressures. Concentrated pumping at the Alexandria well field has caused a reduction in artesian pressure in the Miocene sands to the point where the regional upward discharge has been disrupted, and in some instances, flow directions between the shallow and deep aquifers have reversed. The overlying alluvial aquifer is now recharging the Miocene aquifers in some areas; as a result, there is now a potential for contaminant transport from the surface to the water supply aquifer.

The City of Alexandria Water Department supplies water to England AFB; no supply wells exist on the base. The water is obtained from well fields located over a fairly broad area. Three deep aquifers in the Miocene sands are widely used as water supplies. The sands, separated by clay or shale zones, typically occur at depths of 400, 700, and 1,000 feet. Average well depths are about 1,100 feet. Water consumption at England AFB is summarized in Table 3.4-2.

Table 3.4-2

Water Consumption at England AFB 1986-1991

Year	Consumption (million gallons per year)
1986	185.9
1987	178.3
1988	212.0
1989	179.0
1990	187.1
1991	164.6

Source: U.S. Air Force 1992h.

The water in the upper alluvial aquifer does not currently serve a substantial population within the area, and is used only for agricultural purposes. However, because the aquifer has a sufficient yield, it nonetheless is a potential source of drinking water. Based on these criteria, the aquifer is classified as EPA Class IIB.

Although wells in the alluvium aquifer yield up to 1,700 gallons per minute, the excessive hardness and iron content make this aquifer an unsuitable water source for most domestic, municipal, and industrial consumers.

The Miocene aquifer is not located in a protected watershed, contains less than 10,000 ppm total dissolved solids, is treatable, serves over 2,500 people within the area, and is not considered vulnerable. It is therefore classified as a current source of drinking water (EPA Class IIA).

3.4.3 Air Quality

Air quality in a given location is described as the concentration of various pollutants in the atmosphere, generally expressed in units of ppm or micrograms per cubic meter ($\mu g/m^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant concentration is determined by comparing it to federal and/or state ambient air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare, with a reasonable margin of safety.

The National Ambient Air Quality Standards (NAAQS) were established by the EPA. The NAAQS and Louisiana Ambient Air Quality Standards (LAAQS) have been established for the following pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than or equal to 10 micrometers (μm) in diameter (PM_{10}), total suspended particulates (TSP), and lead (Table 3.4-3). The NAAQS and LAAQS regulate the same pollutants, except Louisiana has retained the TSP standards in addition to the PM_{10} standard, which replaced the TSP national standards on July 1, 1987.

Existing air quality in the region is defined by air quality data and emissions information. Air quality data were obtained for air quality monitoring stations maintained by the Louisiana Department of Environmental Quality. Information on pollutant concentrations measured for short-term (24 hours or less) and long-term (annual) averaging periods was extracted from the monitoring station data to characterize the existing air quality background of the area. Emission inventory information for the region was obtained from the EPA and England AFB. Inventory data are separated by pollutants and reported in tons per day to describe the baseline conditions of pollutant emissions in the area.

Identifying the ROI for an air quality assessment requires knowledge of the pollutant types, source emission rates and release parameters, the proximity relationships of project emission sources to other sources, and local and regional meteorological conditions. For inert pollutants (all pollutants other than O_3 and its precursors), the ROI is generally limited to an area extending a few miles downwind from the source. The ROI for O_3 may extend much farther downwind than the ROI for inert pollutants. For the purpose of this air quality analysis, the ROI is defined as Rapides Parish.

Table 3.4-3

National and Louisiana Ambient Air Quality Standards

Pollutants	Averaging Time	Louisiana Standards[1] Primary[2]	Louisiana Standards[1] Secondary[3]	National Standards[1] Primary[2]	National Standards[1] Secondary[3]
Ozone	1-hour	0.12 ppm	Same as Primary Standard	0.12 ppm (235 $\mu g/m^3$)	Same as Primary Standard
Carbon Monoxide	8-hour	9 ppm	Same as Primary Standard	9 ppm (10 mg/m^3)[4]	--
	1-hour	35 ppm	--	35 ppm	--
Nitrogen Dioxide	Annual average	0.05 ppm	--	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard
Sulfur Dioxide	Annual average	0.03 ppm	--	0.03 ppm (80 $\mu g/m^3$)	--
	24-hour	0.14 ppm	--	0.14 ppm (365 $\mu g/m^3$)	--
	3-hour	--	0.5 ppm	--	0.5 ppm (1,300 $\mu g/m^3$)
Particulate Matter (PM_{10})	Annual AM[5]	50 $\mu g/m^3$	--	50 $\mu g/m^3$	Same as Primary Standard
Total Suspended Particulates	24-hour	150 $\mu g/m^3$	--	150 $\mu g/m^3$	150 $\mu g/m^3$
	Annual GM[6]	75 $\mu g/m^3$	60 $\mu g/m^3$	--	--
Lead	24-hour	260 $\mu g/m^3$	150 $\mu g/m^3$	--	--
	Calendar quarter	1.5 $\mu g/m^3$	--	1.5 $\mu g/m^3$	Same as Primary Standard

Notes: [1]National and Louisiana standards, *other than* O_3 *and those based on annual averages or annual arithmetic means, are not to be* exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year, with maximum hourly average concentrations above the standard, is equal to or less than 1.

[2]Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect public health. Each state must attain the primary standards no later than 3 years after the state implementation plan is approved by the EPA.

[3]*Secondary Standards:* The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a "reasonable time" after the state implementation plan is approved by the EPA.

[4]mg/m^3 = milligrams per cubic meter.

[5]AM = arithmetic mean.

[6]GM = *geometric mean.*

Sources: 40 CFR Part 50 and Louisiana Department of Environmental Quality 1990.

The Federal Clean Air Act, as amended in August 1977 and November 1990, dictates that project emission sources must comply with the air quality standards and regulations that have been established by federal and state regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations resulting from project emissions, both separately and combined with other surrounding sources, and (2) the maximum allowable emissions from the project.

According to EPA guidelines, an area with air quality better than the NAAQS is designated as being in attainment; an area with worse air quality is classified as nonattainment. A nonattainment designation is given to a region if the primary NAAQS for any criteria pollutant is exceeded at any point in the region for more than 3 days during a 3-year period. An area may be designated as unclassified by the EPA when there are insufficient data for a specific pollutant on which to base a determination of attainment status.

The EPA has granted Louisiana the authority to implement regulations to prevent the significant deterioration of air quality in areas that are classified as attainment or unclassified. The Prevention of Significant Deterioration (PSD) program is implemented in large part through the use of "increments" and area classifications that effectively define "significant deterioration" for individual pollutants. The Clean Air Act's area classification scheme for PSD establishes three classes of geographic areas and applies increments of different stringency to each class.

Class I areas are those of special national concern where the need to prevent significant deterioration in air quality is greatest. Consequently, the most restrictive increments apply in Class I areas. Class I areas include all international and national parks, wilderness areas, and memorial parks that exceed certain sizes. Less restrictive increments apply in areas designated as Class II or Class III. Class II areas are all PSD areas that are designated as attainment or unclassified with respect to the NAAQS and are not classified in the Clean Air Act as Class I areas. The Class III area designation permits more deterioration in air quality in specific areas designated by the states for higher levels of industrial development and emissions growth. There are as yet no Class III areas.

3.4.3.1 Regional Air Quality

England AFB and all of Rapides Parish experience good air quality because of the relatively few major sources of air pollutant emissions and good atmospheric dispersion of air pollutants.

Preclosure Reference. Rapides Parish and England AFB are located within the Southern Louisiana-Southeast Texas Interstate Air Quality Control Region (AQCR No. 106) (40 CFR 81.53). The EPA has designated Rapides Parish as an area that "cannot be classified or better than national standards" for O_3, CO, and NO_2. The parish is classified as "better than national standards" for TSP (40 CFR 81.319). England AFB is in a Class II PSD area.

The federal standard for PM_{10} was promulgated in July 1987. Sufficient PM_{10} monitoring data are not yet available to classify many areas of the country. The EPA, therefore, has designated areas according to the likelihood of violating the standard. Group 1 status is assigned to those areas having 95 percent or better probability of exceeding the standard, Group 2 to those areas having 20 to 95 percent probability, and Group 3 to areas with less than 20 percent probability. Rapides Parish has been designated as a Group 3 area.

The Louisiana Department of Environmental Quality operates a particulate monitoring station in Alexandria, approximately 4 miles east of the base. Prior to 1989, this station monitored TSP. In 1989, TSP monitoring was discontinued and replaced with monitoring for PM_{10}. Gaseous pollutants are not monitored in Rapides Parish because of the relatively few major pollution sources in the region.

A summary of particulate concentrations recorded at the Alexandria monitoring station from 1986 through 1990 is presented in Table 3.4-4. The maximum 24-hour and annual geometric mean TSP concentrations are well below the Louisiana TSP standards (see Table 3.4-3). In addition, the PM_{10} concentrations are well below the PM_{10} standards. These measurements are indicative of the good air quality in Rapides Parish and in the vicinity of England AFB.

Table 3.4-4

TSP and PM_{10} Concentrations Measured in Alexandria, Louisiana (in $\mu g/m^3$)

Particulate	Year	First High (24-hour Avg.)	Second High (24-hour Avg.)	Annual Average*
TSP	1986	85	83	42
	1987	100	86	41
	1988	77	73	39
PM_{10}	1989	60	45	26
	1990	49	43	23
	1991	80	44	22

Note: *Geometric means for TSP; arithmetic means for PM_{10}.
Source: Louisiana Department of Environmental Quality 1986-1990.

Two major stationary sources of pollution in Rapides Parish include the 530-MW Rodemacher Power Station near Boyce, approximately 10 miles west of the base, and the International Paper Board Mill in Pineville, approximately 10 miles east of the base (Environmental Protection Agency 1992a). Smaller stationary sources include the City of Alexandria's D.G. Hunter Power Plant and the Texas Gas Corporation natural gas compressor site in Pineville.

Closure Baseline. It can be reasonably assumed that pollutant concentrations after base closure would be similar to, or somewhat less than, concentrations experienced under preclosure conditions because numerous emission sources would be eliminated by closure of the base (e.g., aircraft operations and aerospace ground activity). Closure would also reduce the number of motor vehicles operating in the surrounding area. However, total emissions from the base are relatively small in comparison to Rapides Parish emissions, and the overall effect of closure is expected to have only a small effect on ROI concentrations.

3.4.3.2 Air Pollutant Emission Sources

Preclosure Reference. The most recent emission inventories for England AFB (1989) and Rapides Parish (1988) are summarized in Table 3.4-5. The emission inventory for England AFB is representative of preclosure conditions. The primary emission sources at the base include aircraft, motor vehicles, and aerospace ground equipment. Fuel evaporation, fire training, and surface coating operations contribute a substantial amount of total hydrocarbon emissions. In addition, aircraft ground operations and heating and power production add a small portion to the total inventory.

Table 3.4-5

Preclosure Emission Inventory for England AFB and Rapides Parish (tons per day)

Source	PM_{10}	SO_2	CO	VOC*	NO_2
England AFB					
Aircraft Flying Operations	0.02	0.02	1.02	0.32	0.10
Aircraft Ground Operations	0.00	0.00	0.09	0.03	0.03
Aerospace Ground Equipment	0.00	0.00	0.02	0.02	0.02
Heating and Power Production	0.00	0.01	0.00	0.00	0.00
Motor Vehicles (Military and Civilian)	0.02	0.01	0.79	0.14	0.14
Fire-Fighting Practice Pit	0.02	0.00	0.09	0.08	0.00
Surface Coating	0.00	0.00	0.00	0.03	0.00
Fuel Evaporation (Gas Station and JP-Tanks)	0.00	0.00	0.00	0.16	0.00
TOTAL:	**0.06**	**0.04**	**2.01**	**0.78**	**0.29**
Rapides Parish	43.7	58.3	82.9	24.1	129.2

Note: *VOC = volatile organic compounds.
Sources: Roika 1990; Environmental Protection Agency 1992b.

Closure Baseline. The emission inventory for England AFB after closure would essentially be eliminated. The remaining emissions can be estimated by assuming that emissions, other than those associated with aircraft, aerospace ground equipment, fire-fighting, and heating/power generation, are proportional to the change in onbase population. The ratio of the preclosure base population (including military personnel, military dependents, and civilian employees in 1989) to the base population after closure (1993) is applied to each of the vehicle, surface coating, and fuel evaporation category emissions to estimate closure emissions. Emissions from the aircraft, aerospace ground equipment, and fire-fighting categories are eliminated completely. Heating plants and power generators are assumed to operate at 20 percent of the preclosure capacity to fulfill minimum building heating and power requirements. Closure baseline emissions are presented in Table 3.4-6.

Table 3.4-6

Closure Emission Inventory for England AFB
(tons per day)

Source	PM_{10}	SO_2	CO	VOC	NO_2
Aircraft Flying Operations	--	--	--	--	--
Aircraft Ground Operations	--	--	--	--	--
Aerospace Ground Equipment	--	--	--	--	--
Heating and Power Production	--	0.002	0.000	0.000	0.000
Motor Vehicles (Military and Civilian)	0.000	0.000	0.012	0.002	0.002
Fire-Fighting Practice Pit	--	--	--	--	--
Surface Coating	--	--	--	0.001	--
Fuel Evaporation (Gas Station and JP-Tanks)	--	--	--	0.002	--
TOTAL:	**0.000**	**0.002**	**0.012**	**0.005**	**0.002**

Note: Emissions are based on data from Table 3.4-3 multiplied by the ratio of the 1993 base closure population to the 1989 base population. The value 0.000 indicates the pollutant would be present, but emissions would be less than 0.000 ton (i.e., <2 lb per day). -- indicates the pollutant is not present.

3.4.4 Noise

The ROI for noise at England AFB is Rapides Parish. The areas most affected by base closure and reuse are the base itself, the City of Alexandria, residential areas northwest and southwest of the base (i.e., the communities of Rapides Station and Weil, respectively), and lands adjacent to the base on the northeast and south.

The characteristics of sound include parameters such as amplitude, frequency, and duration, with an extremely large range of amplitudes. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard-unit measurement of sound. Sound also varies with frequency or pitch.

When measuring sound to determine its effects on the human population, A-weighted sound levels (dBA) are typically used to account for the response of the human ear. A-weighted sound levels represent the sound level according to a prescribed frequency response established by the American National Standards Institute (ANSI S1.4 1983). Examples of typical sound levels are shown in Figure 3.4-4.

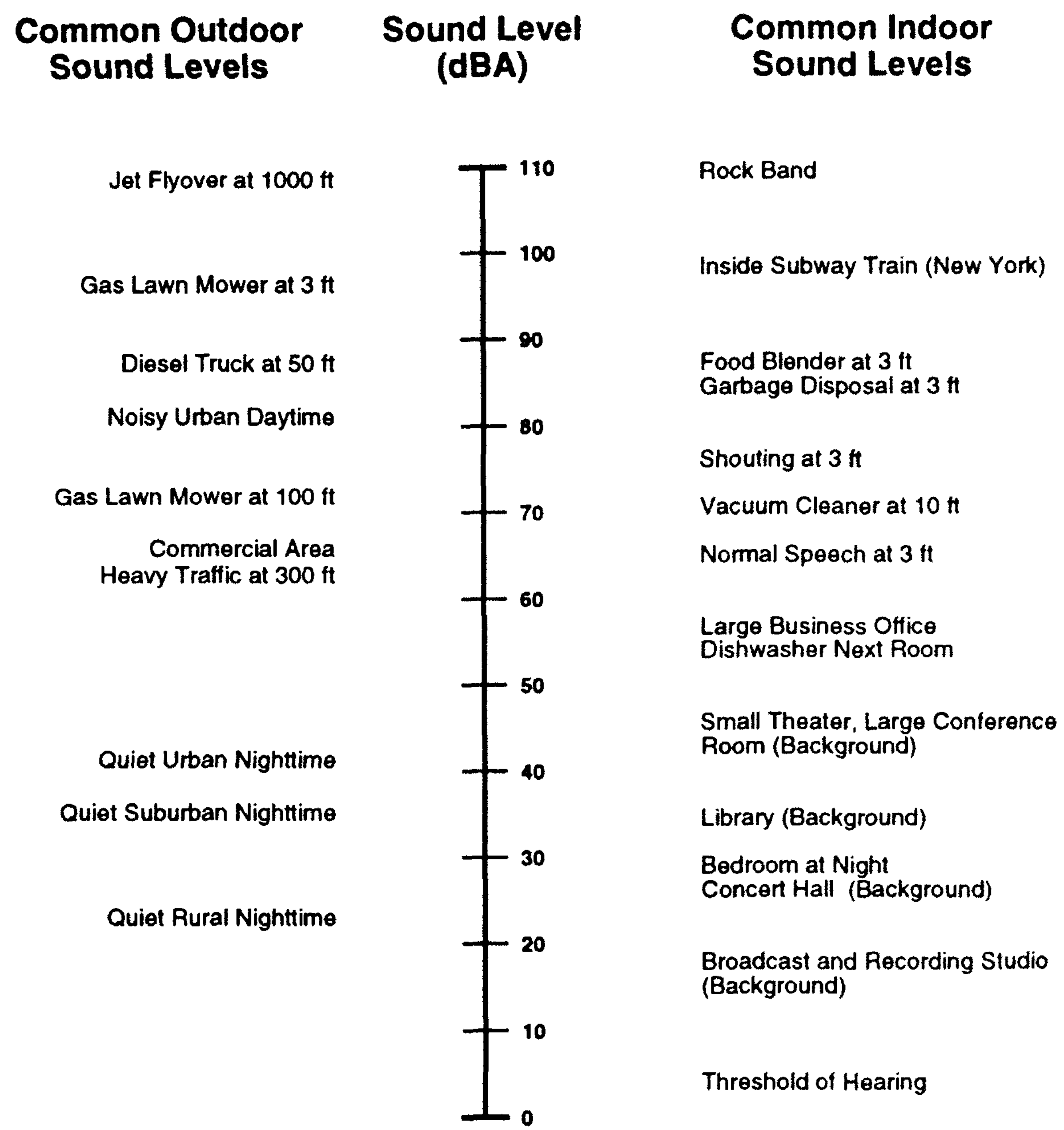
Noise is usually defined as sound that is undesirable because it interferes with speech, communication, and hearing; is intense enough to damage hearing; or is otherwise annoying. Noise levels often change with time; therefore, to compare levels over different time periods, several descriptors were developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans, including land use compatibility, sleep and speech interference, annoyance, hearing loss, and startle effects.

The day-night average sound level (DNL) was developed to evaluate the total community noise environment. The DNL is the average A-weighted sound level during a 24-hour period with a 10 dB adjustment added to nighttime levels (between 10 p.m. and 7 a.m.). This adjustment is added to account for the increased sensitivity to nighttime noise events. The DNL was developed by the EPA and is mandated by the U.S. Department of Housing and Urban Development (HUD), the FAA, and the DOD for land use assessments.

The DNL is an accepted unit for quantifying human annoyance to general environmental noise, which includes aircraft noise. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise in terms of DNL (Code of Federal Regulations 1985). Both Rapides Parish and the City of Alexandria have adopted ordinances which restrict land use in the vicinity of England AFB (see Section 3.2.2.1). FAA-recommended DNL ranges for various land use categories based on the committee's guidelines are presented in Table 3.4-7. The FAA guidelines were used in this study to determine noise impacts.

Another descriptor used to describe time-varying sound is the Sound Exposure Level (SEL). The SEL value represents the A-weighted sound level integrated over the entire duration of the noise event and referenced to a duration of 1 second. When an event lasts longer than 1 second, the SEL value will be higher than the highest sound level during the event.

Appendix H provides additional information about the measurement and prediction of noise. Appendix H also provides more information on the units used in describing noise, as well as information about the effects of noise such as annoyance, sleep and speech interference, health effects, and effects on animals.



Source: Modified from Harris and Miller 1977.

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Comparative A-Weighted Sound Levels

Figure 3.4-4

Table 3.4-7

Land Use Compatibility With Yearly Day-Night Average Sound Levels[1] (in dB)

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

Notes: [1]The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable or unacceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

[2]Key

Y (Yes)	Land use and related structures are compatible without restrictions.
N (No)	Land use and related structures are not compatible and should be prohibited.
25, 30, or 35	Land use and related structures are generally compatible; measures to achieve Noise Level Reduction (NLR) of 25, 30, or 35 dB must be incorporated into design and construction of structure.
(1)	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

Table 3.4-7, Continued

Notes, Continued

(2)	Measures to achieve an NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
(3)	Measures to achieve an NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
(4)	Measures to achieve an NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
(5)	Residential buildings require an NLR of 25.
(6)	Residential buildings require an NLR of 30.
(7)	Residential buildings not permitted.
(8)	Land use is compatible provided special sound reinforcement systems are installed.

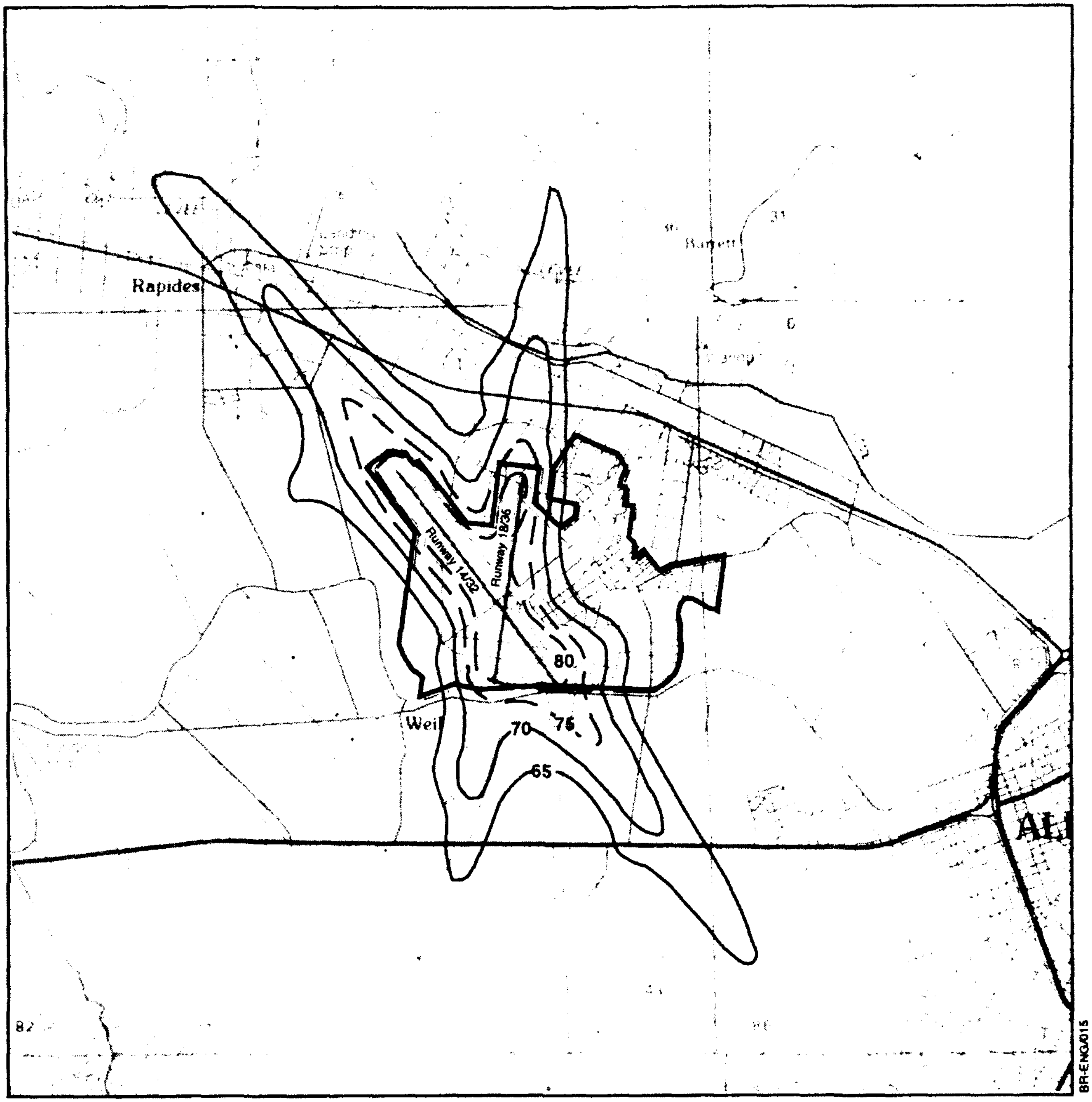
Source: Code of Federal Regulations 1985.

3.4.4.1 Existing Noise Levels

Typical noise sources in and around airfields include aircraft, surface traffic, and other human activities. Military aircraft operations and surface traffic on local streets and highways are the existing primary sources of noise in the vicinity of England AFB. Noise from railroads and waterways in the vicinity of the base would be negligible and is not included in this analysis. In airport analyses, areas with DNL 65 dB and above are often considered in land use compatibility planning and impact assessment; therefore, the DNL contours equal to or greater than 65 dB are of particular interest. Contours equal to and above DNL 65 dB are modeled and analyzed in 5-dB intervals.

Preclosure Reference. Aircraft noise at England AFB occurs during aircraft engine warmup, maintenance and testing, taxiings, takeoffs, approaches, and landings. Noise contours for preclosure aircraft operations were modeled using information on aircraft types; runway use; runup locations; takeoff and landing flight tracks; aircraft altitude, speeds, and engine power settings; and number of daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) operations. Noise contours from the England AFB AICUZ study (U.S. Air Force 1983) are shown on Figure 3.4-5. Only those contours equal to or above DNL 65 dB are shown.

Surface vehicle traffic noise levels for roadways in the vicinity of England AFB were analyzed using the Federal Highway Administration's (FHWA) Highway Noise Model (1978). This model incorporates vehicle mix, traffic volume projections, and speed to generate DNL values. The results of the modeling for surface traffic are presented in Table 3.4-8. Appendix H contains the data used in the surface traffic analysis. The noise levels are presented as a function of distance from the centerline of the nearest road. The actual distances to the DNLs may be less than those presented because the model does not account for the screening effects of intervening buildings, terrain, and walls.



EXPLANATION

—— Base Boundary

—75— DNL Noise Contours (in 5dB Intervals)

0 ¼ ½ 1 MILES

Source: U.S. Air Force 1983.

Preclosure Aircraft Noise Contours

Figure 3.4-5

Table 3.4-8

Distance to DNL From Roadway Centerline for the Preclosure Reference and Closure Baseline

Roadway	Distance (feet) DNL (65 dB)	DNL (70 dB)	DNL (75 dB)
Preclosure			
State Highway 1 East of Airbase Road	95	44	*
State Highway 28 West of Vandenberg Drive	64	30	*
State Highway 28 East of Vandenberg Drive	126	58	*
State Highway 496 East of Vandenberg Drive	37	*	*
State Highway 498 East of Airbase Road	34	*	*
Closure			
State Highway 1 East of Airbase Road	69	36	*
State Highway 28 West of Vandenberg Drive	58	*	*
State Highway 28 East of Vandenberg Drive	90	42	*
State Highway 496 East of Vandenberg Drive	35	*	*
State Highway 498 East of Airbase Road	34		*

Note: *Contained within the roadway.

Closure Baseline. The projected noise levels for the closure baseline were calculated using the traffic projections at base closure (Appendix H). These data include annual average daily traffic, traffic mix, and speeds. The results of the modeling for the roadways analyzed are summarized in Table 3.4-8. Noise levels will be reduced compared to preclosure conditions except for Louisiana State Highway 498 east of Airbase Road, where noise levels will remain the same. As previously described, the actual distances to the DNLs may be less than those presented in the table because the model does not account for screening effects of intervening buildings, terrain, and walls.

At closure, it was assumed that there would be no aircraft operations, and therefore, there would be no areas affected by aircraft noise.

3.4.4.2 Noise-Sensitive Areas

The preclosure ROI for England AFB includes noise-sensitive receptors such as residences (including mobile homes), a school, churches, and recreation areas that are within the DNL 65 dB contour. The noise contours for England AFB (Figure 3.4-5) were developed from an evaluation of aircraft operations and maintenance activities completed for the England AFB AICUZ study. Based on the noise contours developed for the 1983 AICUZ study, approximately

4,000 acres outside the base boundary are exposed to DNLs between 65 and 70 dB, 2,100 acres between 70 and 75 dB, and 630 acres between 75 and 80 dB (Figure 3.4-5). Sensitive receptors northwest of Runway 14/32, which include low-density residences, a school, and a church, are subjected to DNL noise levels of 65 to 75 dB. Within this area, approximately 120 persons are exposed to DNL noise levels of 65 to 70 dB and 40 persons are exposed to DNL noise levels of 70 to 75 dB. South of the base, off the end of Runway 18/36, approximately six persons are exposed to DNL noise levels of 70 to 75 dB.

3.4.5 Biological Resources

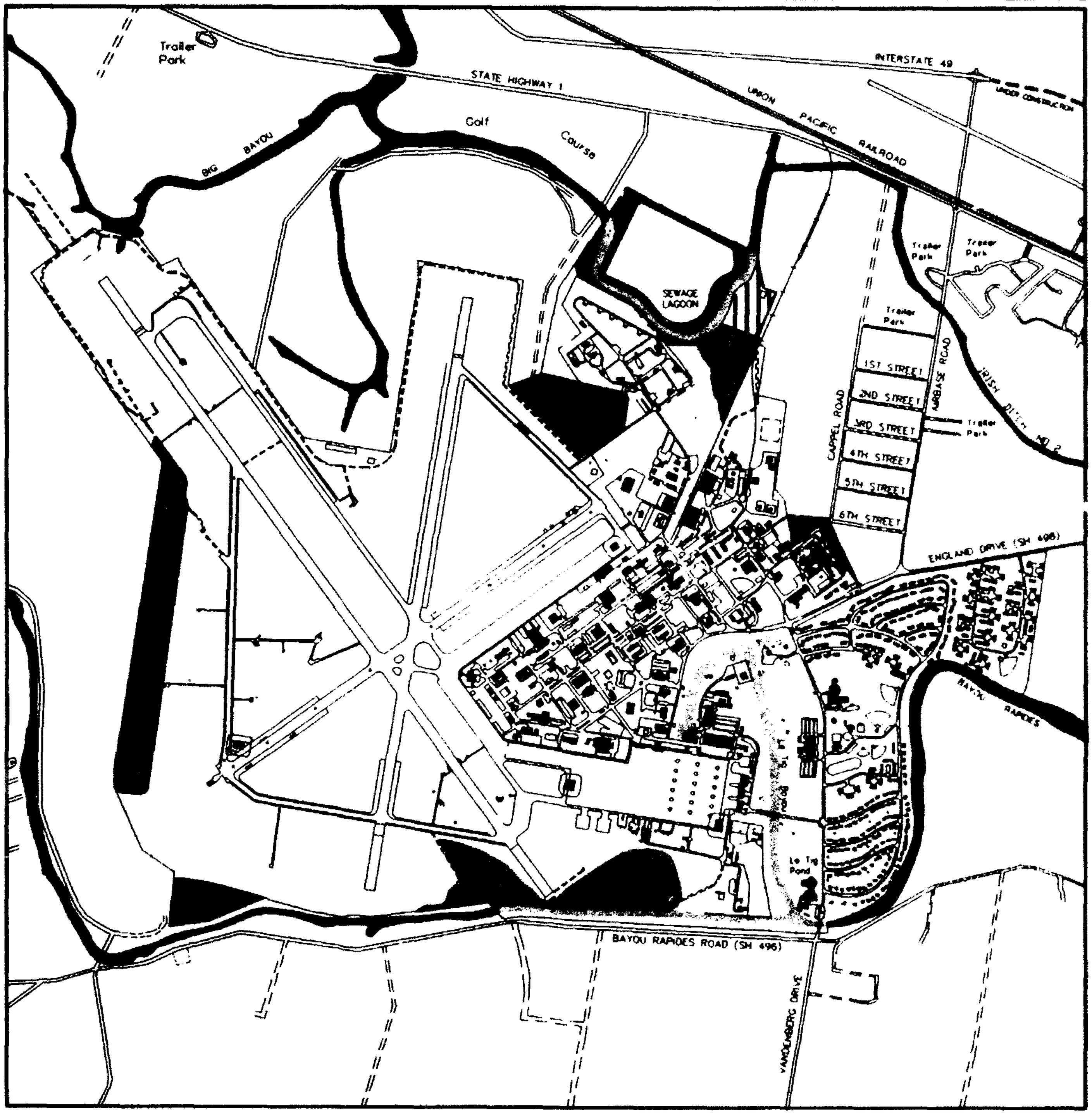
Biological resources include native and introduced plants and animals in the project area. For discussion purposes, these are divided into vegetation, wildlife (including aquatic biota), threatened or endangered species, and sensitive habitats. The ROI for the biological resources analysis is England AFB and natural areas adjacent to the base, including the areas that could be affected by reuse activities.

A field survey of England AFB was conducted in February 1992 for general vegetation and wildlife, as well as for species of special concern. The focus of the survey was the base itself, with less-intensive surveys conducted in natural areas adjacent to the base which could be potentially affected by reuse activities. These areas included wooded tracts north of the base, primarily surrounding the sewage treatment pond, and areas along Big Bayou and Bayou Rapides, which border the base. Most of the remaining land surrounding the base is used for agriculture or residential development. These areas were not surveyed because of the relative lack of native vegetation. Biological resources of concern in the England AFB area include bayous and mature bottomland forests on and adjacent to the base.

3.4.5.1 Vegetation

Consistent with its use as an Air Force installation, a majority of the base is maintained in short vegetation consisting of grasses, sedges, legumes, and various weedy forbs. Areas near the runways, taxiways, and aircraft aprons are periodically mowed for hay production; those areas immediately adjacent to runways are mowed more frequently. Commercial, administrative, industrial, recreational, and residential areas throughout the base are similarly maintained in short vegetation except for various trees and shrubs used in landscaping. The remainder of the base consists of vegetation in various stages of early succession following disturbance (grasses, forbs, young shrubs, and trees). Exceptions include vegetation in and along the various sloughs and in the forested areas located in the northeastern portion of the base. Vegetation types on England AFB are shown in Figure 3.4-6.

Improved and Semi-Improved Areas. Most of England AFB consists of improved and semi-improved areas, including areas near or surrounding the runways, taxiways, aircraft parking aprons, munitions storage area, berms



EXPLANATION

- Shrub/Thickets
- Forested
- Forested (Mature Bottomland)
- Hay Cropping (Outleased)
- Sloughs
- Jurisdictional Wetlands Within Base Boundary
- Landfills/Refuse Areas
- Developed/Landscaped*

* Within Base Boundary

0 500 1000 2000 Feet

Vegetation Map of England AFB and Vicinity

Figure 3.4-6

around the sewage treatment pond, horse stables, pasture areas, landfills, and recreational areas.

Improved areas are mowed regularly in accordance with the Air Force's security and safety policies. Characteristic vegetation includes various grasses, such as dallis grass (*Paspalum dilatatum*), St. Augustine grass (*Stenotaphrum secundatum*), and Bermuda grass (*Cynodon dactylon*); sedges; and many forbs. Common forbs include vetches (*Vicia* spp.), clovers (*Trifolium* spp.), bur clovers (*Medicago* spp.), and pink evening-primrose (*Oenothera speciosa*). Perimeter fencerows in these areas are typically overgrown with vines, shrubs, and a few immature trees. The small size of the trees indicates that the fences are periodically cleared of woody plants.

Areas that are leased and maintained for hay production support most of the species occurring in the improved areas. However, because these areas are less frequently mowed, they support taller vegetation dominated by little bluestem (*Schizachyrium scoparium*), broomsedge (*Andropogon virginicus*), and Johnson grass (*Sorghum halepense*).

The berm and berm border surrounding the sewage treatment pond, and the horse stables and pasture area, are heavily grazed by livestock. Dominants on the berm and berm border are generally unpalatable vegetation (to livestock) of 1- to 2-meter-tall forbs and grasses, including thoroughworts (*Eupatorium* spp.), goldenrod (*Solidago canadensis*), and Johnson grass. Species composition at the horse stables and pastures is similar to the berm and berm border, but less dense with woody vegetation.

Landfills and refuse areas are highly disturbed and exhibit weedy species, such as giant ragweed (*Ambrosia trifida*), sandbar willow (*Salix exigua*), and bur-clover, which are typical of first-year successional stages of alluvial lands in Louisiana.

The landfill/refuse site west of the railroad spur has two unusual areas. One area has a kudzu (*Pueraria lobata*) infestation consisting almost exclusively of the species. Kudzu is a climbing, noxious vine which spreads over and kills other vegetation. The other is a graded, rather poorly drained area dominated by plumegrass (*Erianthus strictus*).

Poorly drained depressions of various sizes occur within the improved and semi-improved areas, along the northern perimeter of the sewage treatment pond berm border, and in the landfill and refuse areas. Characteristic species are spike-rushes (*Eleocharis* spp.), flatsedges (*Cyperus* spp.), pennywort (*Hydrocotyle umbellata*), water-starwort (*Callitriche heterophylla*), waterwillows (*Ludwigia* spp.), and rushes (*Juncus* spp.). Wet areas at the landfills support climbing hempweed (*Mikania scandens*), buttercups (*Ranunculus* spp.), and sedges (*Carex* spp.). Channels within the drainage canals in different areas of the base support many of the same grass and forb species common to other areas of the base. These canals are generally thickly overgrown at the margins with immature shrub and tree specimens. It appears that the canals are cleared every few years to prevent vegetation takeover.

Shrub areas are located along the perimeter fence and unused taxiway. These appear to be former hay-producing areas that were abandoned approximately 12 to 15 years ago and left to undergo plant succession. They are characterized by a dense growth of shrubs, vines, and young trees. Grasses and forbs include broomsedge, little bluestem, goldenrod, giant ragweed, and sedges. Similar vegetation is found in the southwestern corner of the base, some of which appears to be slightly older (approximately 15 to 20 years). The area located near the perimeter fence appears to be in even later successional stages (25 + years). This area is dominated by trees and vines.

Sloughs. Sloughs are sluggish, bayou-type drainages which contain water most of the time, but occasionally dry out. Prominent sloughs are located on the southern perimeter (Bayou Rapides), in the recreation area, and at various points along the northern perimeter (Big Bayou). They are characterized by bald cypress (*Taxodium distichum*), swamp-privet (*Forestiera acuminata*), water elm (*Planera aquatica*), and buttonbush (*Cephalanthus occidentalis*). The banks of the sloughs are occupied by various bottomland hardwood trees and vines. Aquatic vegetation in the slough near the recreation area (near the Back Gate) includes water-lily (*Nymphaea odorata*) and duckweed (*Lemna minima*).

Forested Areas. Several small plots of forest covering approximately 100 acres occur on England AFB. The wooded areas west and south of the sewage treatment pond are fairly well-developed bottomland forests (50 + years). The area is dominated by box elder (*Acer negundo*), water oak (*Quercus nigra*), hackberry (*Celtis laevigata*), and hercules-club (*Zanthoxylum clava-herculis*). Other trees include red maple (*Acer rubrum*), sycamore (*Platanus occidentalis*), and, near the sloughs, bald cypress. Prominent vines are muscadine (*Vitis rotundifolia*), rattan (*Berchemia scandens*), peppervines (*Ampelopsis* spp.), trumpet creeper (*Bignonia capreolata*), and poison ivy (*Toxicodendron radicans*).

A forested area, covering approximately 15 acres, is just east of the sewage treatment pond. Within the natural plant communities of Louisiana, the area is classified as a mature bottomland forest, although it does not exactly fit into any of the recognized subtypes. The distribution of vegetation in a bottomland forest is determined by anaerobic soil conditions, which exist in a gradient depending on soil water saturation. The higher ridges, which are not normally flooded, are dominated by large specimens of water oak, sweetgum (*Liquidambar styraciflua*), American elm (*Ulmus americana*), pecan (*Carya illinoensis*), sycamore, and hackberry. Near or in the sloughs, which are often inundated, are bald cypress, black willow (*Salix nigra*), box elder, eastern cottonwood (*Populus deltoides*), and red maple. Plants in the larger trees are resurrection fern (*Polypodium polypodioides* var. *michauxianum*), mistletoe (*Phoradendron serotinum*), Spanish moss (*Tillandsia usenoides*), and various liverworts and mosses. Dominant trees in this area exceed 80 feet in height and 3 feet or more in diameter at breast height. Apparently, this is one of the better-preserved bottomland forests in this largely agricultural region.

Two additional wooded areas occur off the base, adjacent to the base boundary. The first is a small piece of land located northeast of the base. The area is a fairly mature woodland dominated by water oak, hackberry, sweetgum, American elm, pecan, and red maple. Prominent shrubs are deciduous holly (*Ilex decidua*), rough-leaved dogwood (*Cornus drummondii*), privets (*Ligustrum* spp.), and eastern red cedar (*Juniperus virginiana*). Other prominent plants are palmetto (*Sabal minor*), greenbriers (*Smilax* spp.), sedges, and vetches. The other wooded area is near the base trailer park. This area is characterized by sweetgum with many of the same tree species noted earlier along with a few specimens of sycamore and box elder. Other plants include rattan, peppervine, and elderberry (*Sambucus canadensis*).

Residential, administrative, industrial, and recreational areas are dominated by lawn grasses, most notably St. Augustine grass and dallis grass. The streets and buildings are lined with various trees and shrubs which highlight the roughly rectangular layout of the base. Ornamentals include native plants such as loblolly pine (*Pinus taeda*), flowering magnolia (*Magnolia virginiana*), sycamore, pecan, wax-myrtle (*Myrica cerifera*), longleaf pine (*Pinus palustris*), red maple, bald cypress, and hackberry.

3.4.5.2 Wildlife

A number of species were detected in virtually all habitat types on the base. These included plains pocket gopher (*Geomys bursarius*), common crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), robin (*Turdus migratorius*), and starling (*Sturnus vulgaris*). Additional common species typical in close association with humans include rock dove (*Columbia livia*) and house sparrow (*Passer domesticus*).

Improved and Semi-Improved Areas. These areas support relatively few wildlife species, but do include a number of mammals such as eastern cottontail (*Sylvilagus floridanus*), eastern mole (*Scalopus aquaticus*) opossum (*Didelphis marsupialis*), roof rat (*Rattus rattus*), Norway rat (*R. norvegicus*), house mouse (*Mus musculus*), and raccoon (*Procyon lotor*).

Raptors observed foraging in the grassy areas include the red-tailed hawk (*Buteo jamaicensis*), kestrel (*Falco sparverius*), marsh hawk (*Circus cyaneus*), and turkey vulture (*Cathartes aura*). Other avian species observed or expected include robin, common crow, common grackle (*Quiscalus quiscula*), starling, mourning dove (*Zenaida macroura*), eastern kingbird (*Tyrannus tyrannus*), dickcissel (*Spiza americana*), loggerhead shrike (*Lanius ludovicianus*), and eastern meadowlark (*Sturnella magna*). Cattle egrets (*Bubulcus ibis*) are also often seen in these areas, especially in the vicinity of the poorly drained depressions and drainage channels. These wet areas are also frequented by great egrets (*Casmerodius albus*) and great blue herons (*Ardea herodias*). Although invertebrates are abundant in all habitats on the base, the buckeye butterfly (*Precis coenia*) was the only invertebrate documented during the February 1992 survey. This species was seen on the berm encircling the sewage treatment pond.

The additional cover provided by the shrub areas near the base perimeter to the west and southwest affords opportunities for additional wildlife species including eastern cottontail, coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and white-tailed deer (*Odocoileus virginianus*). The additional cover provided to small mammals by these areas limits the suitability for utilization by foraging raptors. However, the raptor species previously discussed are expected to forage in these areas periodically, especially in the ecotonal areas adjacent to the grasslands.

Sloughs. The sloughs on and around the base support a variety of tree species which, along with the water source, provide habitat for a diverse assemblage of wildlife species. Mammals detected include opossum, fox squirrel (*Sciurus niger*), beaver (*Castor canadensis*), nutria (*Myocastor coypus*), and raccoon. Although not detected during the February 1992 survey, swamp rabbits (*Sylvilagus aquaticus*), striped skunks (*Mephitis mephitis*), and marsh rice rats (*Oryzomys palustris*) are expected to be relatively common around these sloughs. These areas support a number of waterfowl and other avian species. Wood ducks (*Aix sponsa*), mallards (*Anas platyrhynchos*), red-winged blackbirds (*Agelaius phoeniceus*), and northern cardinals (*Cardinalis cardinalis*) were among the species commonly detected during the February 1992 survey.

A relatively large number of herpetofauna species have been documented on England AFB (Noble 1986). The majority of these species are typical of fairly wet areas and likely to occur in and around the sloughs and the sewage treatment pond. Only three herpetofauna species, the red-eared turtle (*Chrysemys scripta elegans*), bullfrog (*Rana catesbeiana*), and green anole (*Anolis carolinensis*), were detected during the February 1992 survey, but this lack of species richness is largely attributable to the season of the survey. The sloughs and sewage treatment pond are likely to support a variety of herpetofauna including turtle species, water snakes (*Nerodia* spp.), western cottonmouths (*Agkistrodon pisciorus*), southern copperhead (*A. contortrix contortrix*), western pygmy rattlesnake (*Sistrurus miliarius streckeri*), Texas coral snake (*Micrurus fulvius tenere*), crayfish snakes (*Regina* spp.), salamanders, and frogs (*Rana* and *Hyla* spp.). Although no high-quality fish habitat occurs on England AFB, the sloughs do support a variety of species. Common among these are shiners (*Notropis* spp.), sunfish (*Lepomis* spp.) and pygmy sunfish (*Ellesona zonatum*), several catfishes (*Ictalurus* spp.) and madtoms (*Noturus* spp.), perches (Percidae), carp (*Cyprinus carpio*), and suckers (Castomidae). Recent improvements to Le Tig Bayou, the slough in the golf course area, may increase its potential to support additional fish species.

In addition to the species previously mentioned, the sewage treatment pond supports a variety of waterfowl. During the February 1992 survey, pied-billed grebes (*Podilymbus podiceps*), mallards, northern pintails (*Anas acuta*), lesser scaup (*Aythya affinis*), and coots (*Fulica americana*) were all observed utilizing the pond.

Forested Areas. Forested areas on and adjacent to the base represent an important wildlife resource in the area. A relatively small number of these habitats exist on the base; however, these remaining habitats are important in this largely agricultural region. These areas support a variety of mammals including fox squirrel, eastern gray squirrel (*Sciurus carolinensis*), coyote, and white-tailed deer. The forests are particularly important to raptors because they provide potential nesting and roosting habitat for the species previously discussed, as well as for the red-shouldered hawk (*Buteo lineatus*), which is typical of forested areas.

3.4.5.3 Threatened and Endangered Species

Federal- and state-listed threatened, endangered, candidate, or special concern species are known to occur in the vicinity of England AFB. The status and distribution of these species were determined through contacts with federal and state agencies, and a literature review. The Air Force requested a list of species in the project area from the U.S. Fish and Wildlife Service, as required for initiation of informal consultation under Section 7 of the Endangered Species Act (as amended). Only the endangered red-cockaded woodpecker (*Picoides borealis*) and the endangered Louisiana pearlshell mussel (*Margaritifera hembeli*) are known to occur in Rapides Parish, but it is unlikely that either occurs on England AFB because of the lack of suitable habitat. Habitat for both species is known to occur on Claiborne Range, approximately 10 miles southwest of the base; however, the range is not part of this disposal action.

The only other listed resident animal that is known to occur within a 50-mile radius of the base is the threatened American alligator (*Alligator mississippiensis*). Two endangered species, the American peregrine falcon (*Falco peregrinus*) and American bald eagle (*Haliaeetus leucocephalus*), may be transients within 50 miles of the base, particularly near the Toledo Bend Reservoir on the Sabine River on the Texas-Louisiana border west of the base. One federal candidate plant species, Oglethorpe's oak (*Quercus oglethorpensis*), may also occur within this 50-mile radius (Table 3.4-9).

No plant or animal species listed as threatened, endangered, or sensitive by the U.S. Fish and Wildlife Service was detected on the base during the February 1992 survey, and the habitats required are not found in sufficient quantities to support these species.

3.4.5.4 Sensitive Habitats

Sensitive habitats include wetlands, plant communities that are unusual or of limited distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, or crucial summer/winter habitat).

Table 3.4-9

Sensitive, Threatened, and Endangered Species That Occur or May Occur Within a 50-Mile Radius of England AFB

Scientific Name	Common Name	Status*		Occurrence
		Federal	State	
Quercus oglethorpensis	Oglethorpe's oak	3C	None	Possible, based on habitat available, species range, and historical sitings
Margaritifera hembeli	Louisiana pearlshell mussel	E	E	Habitat occurs on Claiborne Range
Picoides borealis	Red-cockaded woodpecker	E	E	Habitat occurs on Claiborne Range
Alligator mississippiensis	American alligator	T(S/A)	T(S/A)	Confirmed within 50-mile radius of England AFB
Falco peregrinus anatum	American peregrine falcon	E	E	Possible, based on habitat available, species range, and historical sitings
Haliaeetus leucocephalus	American bald eagle	E	E	Possible, based on habitat available, species range, and historical sitings

Note: *Status: T = Threatened
T(S/A) = Threatened by similarity of appearance to the American crocodile (*Crocodylus acutus*)
E = Endangered
3C = Category 3C candidate species

Sources: Noble 1986; U.S. Fish and Wildlife Service 1992; McNease 1992; Cook 1991a.

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Federal Interagency Committee for Wetland Delineation 1989). Areas that are periodically wet but do not meet all three criteria (hydrophytic vegetation, hydric soils, and wetland hydrology) are not jurisdictional wetlands subject to Section 404 of the Clean Water Act and to the swampbuster provision of the Food Security Act. Areas that have been disturbed or that are classified as problem area wetlands, however, may not meet all three criteria as a result of natural or man-induced reasons, yet are still considered wetlands.

Filling of wetland areas totaling less than 10 acres does not generally require an individual COE permit because this type of activity is covered by the existing authorization of a nationwide permit. The COE must be notified prior to filling of a wetland between 1 and 10 acres. The COE should be notified even in those cases where filling of less than 1 acre is anticipated.

Based on the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps and the February 1992 survey, sensitive habitats associated with England AFB include wetlands and mature bottomland forest. Wetlands in the immediate vicinity of England AFB, according to NWI, include Big Bayou and Bayou Rapides, as well as several smaller areas on and adjacent to the base. These smaller areas include a transitional wetland area located at the western boundary of the base within a forested/shrubby area; two small wetland areas adjacent to England AFB north of the runways; the sewage treatment pond in the northern portion of the base; and Le Tig Bayou in the golf course area. Wetland vegetation, and apparently soils and hydrological conditions characteristic of wetlands, exist in several areas of the base. However, based on a jurisdictional determination made by the COE (valid until October 1993), only Big Bayou and Bayou Rapides, including Le Tig Bayou, are subject to Section 404 of the Clean Water Act. These areas total approximately 27 acres on the base (Figure 3.4-6).

The mature bottomland forest east of the sewage treatment pond is one of the better-preserved examples of bottomland hardwood forest in a largely agricultural region.

3.4.6 Cultural and Paleontological Resources

Cultural resources include prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. Paleontological resources are the fossil evidence of past plant and animal life. Cultural resources have been divided for the purpose of discussion into three main categories: prehistoric resources, historic resources, and Native American resources. These types of resources are defined in Appendix E.

The ROI for the analysis of cultural and paleontological resources includes, at a minimum, all areas within the base boundaries, whether or not certain parcels would be subject to ground disturbance. For this analysis, the ROI is synonymous with the Area of Potential Effect (APE) as defined by the National Historic Preservation Act (NHPA). The potential conveyance of federal property to a private party or nonfederal agency constitutes an undertaking or a project that falls under the requirements of cultural resource legislative mandates, because any historic properties located on that property would cease to be protected by federal law.

Numerous laws and regulations require federal agencies to consider the effects of a proposed project on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office [SHPO], the Advisory Council on Historic Preservation). Methods used to achieve compliance with these requirements are presented in Appendix E.

Only those potential historic properties determined to be significant under cultural resource legislation are subject to protection or consideration by a federal agency. The quality of significance, in terms of applicability to National Register of Historic Places (NRHP) criteria, and of integrity, is discussed in Appendix E. Significant cultural resources, either prehistoric or historic in age, are referred to as "historic properties."

In compliance with the NHPA, the Air Force has initiated the Section 106 review process with the Louisiana SHPO.

3.4.6.1 Prehistoric Resources

The prehistory of Louisiana extends from approximately 10,000 B.C. to A.D. 1600 and is divided into four broad time periods: Paleoindian (10,000-6000 B.C.), Archaic (6000-500 B.C.), Woodland (500 B.C. - A.D. 800), and Caddoan (A.D. 800-1540) (Newkirk and Mueller 1981; Kniffen *et al.* 1987; Newman 1984; Smith *et al.* 1983). The Paleoindian period is represented by a highly mobile hunting and foraging strategy which included the exploitation of late Pleistocene megafauna (Smith *et al.* 1983). The Archaic period is characterized by semisedentary hunter-gatherer groups exploiting forest, riverine, marsh, and delta environments (Smith *et al.* 1983). The Poverty Point culture, a highly complex chiefdom with widespread trade networks and massive earthworks, developed during the Late Archaic (Smith *et al.* 1983). The Woodland period is represented by the Tchefuncte, Marksville, and Troyville cultures (Smith *et al.* 1983), which are based on hunting, gathering, and fishing strategies, and incipient horticulture.

The Marksville culture was the local variation of the Hopewell Culture with elaborate burial mounds and ceremonialism. The Caddoan period is initially characterized by intensive maize agriculture, large temple mounds with open plazas, and elaborate burials of high-status individuals, indicating a highly complex society. More scattered settlements and less elaborate burials occurred during the middle of the Caddo period; however, increased ceremonialism and complex social organization reappeared by the end of the period.

England AFB is located on the alluvial deposits of the Red River. Known cultural resources of the valley document the shift from upland Archaic occupation of the Mid-Holocene to the more diversified subsistence-settlement patterns that followed (Newkirk and Mueller 1981). Identified prehistoric sites in the vicinity of England AFB and Alexandria have, for the most part, been found on "finger" ridges and small knolls surrounded by low swampy areas adjacent to the Red River. Such locations allowed for the exploitation of a variety of ecotones. Recorded sites are typically small ceramic and lithic scatters dating to the Late Archaic (3000 - 500 B.C.) and the Woodland (Newkirk and Mueller 1981). A moderately well-preserved former meander course of the Red River, Bayou Rapides, forms the southern boundary of England AFB.

In 1987, a reconnaissance survey of England AFB was conducted by the National Park Service. Because of extensive ground modification during base construction, no undisturbed prehistoric sites were anticipated. The Louisiana SHPO concurred that no NRHP-eligible sites occur at England AFB (February 28, 1992).

3.4.6.2 Historic Resources

The fertile Red River Valley, in which England AFB is located, has played a significant role in the history of Louisiana (Newkirk and Mueller 1981). The river has provided access into the northwest portion of the state and its rich bottomlands have been some of the best cotton land in the South. Recorded history of the region dates to the mid-sixteenth century when exploration, first by the Spanish and later the French, occurred. The colonial period which followed was characterized by frontier outposts and the subsequent development of plantation-based commercial agriculture.

Although exact routes are uncertain, historical records indicate that both the Spanish and French entered what was to become Louisiana prior to 1700. Hernando de Soto was probably the first Spanish explorer. Luis de Moscoso was the first to travel in the Red River Valley region. Sieur de la Salle claimed Louisiana for France in 1682, and in 1687, Henri de Tonti followed the Red River as far upstream as Shreveport. The French colony of Louisiana was founded in 1699 and the first documented exploration of the Red River occurred the following year. Natchitoches was founded in 1714 and became an important trade center.

The initial French Dominion was centered on trade with the Spanish and the Indians. Louisiana came under Spanish dominion by treaty in 1762 after the loss of French Canada and the perception that the region would be isolated between unfriendly English and Spanish colonies. Under Spanish rule, the population grew slowly but steadily. Land grants of long, narrow, river-front parcels attracted immigrants into the Red River Valley, and by the mid-1770s, commercial agriculture, consisting of tobacco and indigo, was well established. After a brief return to French control, the region came under American dominion in 1803 with the Louisiana Purchase. Formal statehood came in 1812. Development of the Red River Valley dramatically increased after 1838 when engineer Henry Shreve successfully cleared the river channel of the Great Raft, a giant log jam as much as 25 feet thick and more than 90 miles long. River traffic proliferated and cotton was the principal trade item.

The valley was a strong southern stronghold during the Civil War and provided vital food and supplies for the Confederacy until federal troops occupied New Orleans. In 1864, Union troops tried to gain control over Shreveport and the valley's cotton lands. They were defeated by the Confederates just south of Mansfield. The Union retreat to the Mississippi was complicated by low water in the Red River, which initially prevented passage below the Alexandria Rapids. The fleet of ironclad gunboats was saved from destruction, however, by the construction of Bailey's Dam (a National Register property) near Pineville, an ingenious movable dam which allowed the water level to be raised and then released as a surge allowing the heavy boats to cross the rapids.

During post-Civil War Reconstruction, the valley struggled to recover from the effects of the war. Cotton remained the dominant crop and labor problems were addressed with a strategy of sharecropping. Significant log jams on the river again posed serious navigation problems. Once these were taken care of, steamboat shipping of cargo boomed. Overland transport by road and railroad, however, replaced steamboats early in the 20th century. The rail network afforded access to the area's pine forest and Louisiana led the nation in timber production from 1910 to 1914. The discovery of oil in nearby Caddo Parish in 1906 contributed to the economic diversification of the valley. While cotton remains the main cash crop, soybeans and cattle have also become significant.

Oak Isle Plantation was established in the vicinity of England AFB in 1838 by Dr. John Seip, and originally consisted of a large mansion, numerous outbuildings including a blacksmith shop and cotton gin, two sets of slave quarters, and a cemetery (*La Plume* 1982). All of the build ngs, except the slave quarters, were burned by federal troops in 1864 (*La Plume* 1982). By 1866, the mansion had been rebuilt by Dr. Seip's son, Major Frederic Seip (*La Plume* 1982; Wiltse 1967). Major Seip rebuilt the plantation, growing cotton, sugarcane, and soybeans; raising cattle; and producing syrup from his own sugar mill. Major Seip also became a Louisiana State Senator and a railroad spur in the area was named in his honor (*La Plume* 1982; Wiltse 1967).

The McNutt Plantation was established before 1850 by Anderson C. McNutt in the central portion of the England AFB area. The plantation originally consisted of a large residence and numerous outbuildings including 18 slave dwellings. After 1861, the McNutt Plantation was leased to John Andrews. In 1895, the plantation was sold to Bernard Mayer. The Weil Company maintained tenant cabins along Bayou Rapides near the McNutt Plantation residence prior to the 1920s.

Portions of Oak Isle, McNutt, and New Jerusalem plantations were acquired in 1939 for construction of a new municipal airport (Todd 1990). Construction began in 1942 and the new municipal airport was immediately leased to the Army Air Force, becoming Alexandria Army Air Base. Most of the buildings constructed during this time were made from tarpaper. The base was returned to the city after World War II for commercial use, but reactivated in 1950 with the Korean conflict. Most of the early buildings were replaced with modern facilities in the mid-1950s (Todd 1990). In 1955, the airfield became England AFB.

Historic sites in the region are primarily debris scatters of ceramics, glass, bricks, and other materials probably related to turn-of-the-century homesites (Newkirk and Mueller 1981). Like prehistoric sites in the area, historic sites are found primarily on finger ridges or small knolls surrounded by low marshy areas adjacent to the Red River.

A field reconnaissance survey and archival research have been conducted on England AFB to determine the extent of historic archaeological remains associated with antebellum and postbellum occupations. A small scatter of household debris was observed in the area south of the Oak Isle Plantation residence near Building 1120. Isolated fragments of stoneware were also identified along the Oak Isle Plantation levee, west of the ninth fairway on the base golf course. Artifacts or features associated with the McNutt Plantation have not been identified because of the dense vegetation in that area; however, buried remains of privies and cisterns may occur in the area.

Five buildings on England AFB (Buildings 207, 801, 802, 1302, and 1903), constructed prior to 1945, are still standing and are presumed to have been a part of Alexandria Army Air Base. In 1987, a historic standing structures survey was completed for Rapides Parish, including England AFB (Lemmons 1987). No standing structures on England AFB are considered NRHP-eligible.

The Ennis Memorial Cemetery (formerly the Oak Island Cemetery), a private cemetery belonging to Cedar Grove Benevolent Society No. 5 and Ennis Memorial Benevolent Society No. 7, is located in the center of the base adjacent to the England AFB golf course parking lot (Thompson 1984; *La Plume* 1982). This cemetery may have been associated with the Oak Isle Plantation; however, the oldest visible headstone dates to 1899 (Thompson 1984; *La Plume* 1982).

3.4.6.3 Native American Resources

Numerous Native American groups, both indigenous and resettled, are associated with the Alexandria area including the Avoyel, Caddo, and displaced Mobile Bay groups (Kniffen *et al.* 1987; Newkirk and Mueller 1981; Smith *et al.* 1983). Prior to 1700, the Avoyel and several Caddo groups occupied or traversed the area around present-day Alexandria. The Avoyel lived in villages near present-day Alexandria and Marksville, and controlled the Red River from Alexandria to the Mississippi River (Kniffen *et al.* 1987).

The Avoyel manufactured and traded tool blanks and projectile points, and were middlemen in the trade between west Texas groups and Louisiana coastal and swamp groups (Kniffen *et al.* 1987; Smith *et al.* 1983). Several Caddo groups, such as the Doustioni, Natchitoches, and Adai, occupied portions of the Red River northwest of the Alexandria area (Kniffen *et al.* 1987; Newkirk and Mueller 1981; Smith *et al.* 1983).

After 1700, increased population pressures by European occupation created intertribal conflicts between small tribal groups for subsistence resources and territory. The Avoyel still occupied their traditional territory along the Red River but their population declined; currently, only a few descendants remain with the Tunica-Biloxi tribe near Marksville (Kniffen *et al.* 1987). The Caddoan groups still occupied the Red River area northwest of Alexandria and some groups moved farther upstream (Kniffen *et al.* 1987).

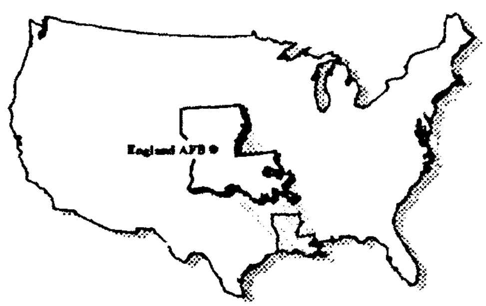
By 1764, several Native American groups from Mobile Bay had moved into the Alexandria area including the Apalachee, Taensa, Biloxi, Chatot, Yowani Choctaw, and Pascagoula (Kniffen *et al.* 1987; Newkirk and Mueller 1981). The Chatot settled near the Red River rapids at present-day Alexandria. The Koasati were also located along the Red River in the general area in the late 1700s (Kniffen *et al.* 1987). By the early 1800s, most of the Apalachee, Taensa, Pascagoula, Koasati, and Biloxi groups had moved into east Texas or farther upstream along the Red River (Kniffen *et al.* 1987). By 1835, the Caddo groups ceded their lands to the United States and moved first to Texas, then to Oklahoma in 1859 (Kniffen *et al.* 1987).

Native American groups occupying the lower Red River practiced horticulture, hunting of numerous large and small mammals, gathering plant resources, and fishing and collecting riverine resources (Kniffen *et al.* 1987). Native American resources that may occur in the area include temple mounds, sweatlodges, dance houses, burials, cemeteries, springs or water holes, and locations of sacred temple fires (Kniffen *et al.* 1987).

3.4.6.4 Paleontological Resources

The surficial geology of England AFB consists of a moderately thick section of Holocene alluvium of the Red River Valley (Engineering-Science 1983). The alluvial deposits of clay, silt, sand, and gravel are poorly sorted, fine upwards, and attain a maximum thickness of approximately 37 meters in the vicinity of the base. The alluvial unit overlies a thick sequence of primarily unconsolidated Miocene sediments with some shales (Engineering-Science 1983). These Miocene deposits range in thickness from approximately 150 meters in the northwest portion of the parish to 1,600 meters in the southeast.

In the vicinity of England AFB, Miocene deposits are exposed only in deeply cut stream valleys. The two Miocene formations, the Fleming and Catahoula, are not considered fossiliferous. The modern alluvium which characterizes England AFB geology is probably less than 2,000 years old (Haag 1971; Coleman and Smith 1964). Because of its young age and mode of deposition, the alluvium probably does not contain any scientifically important paleontological material.



CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter discusses the potential environmental consequences associated with the Proposed Action and alternatives. To provide the context in which potential environmental impacts may occur, discussions of potential changes to the local communities (i.e., population, land use and aesthetics, transportation, and community and public utility services) are included in this Environmental Impact Statement (EIS). In addition, issues related to current and future management of hazardous materials and waste are discussed. Impacts to the physical and natural environment are evaluated for soils and geology, water resources, air quality, noise, biological resources, and cultural and paleontological resources. These impacts may occur as a direct result of disposal and reuse activities or as an indirect result caused by changes within the local communities. Cumulative impacts and possible mitigation measures to minimize or eliminate the adverse environmental impacts are also presented.

Cumulative impacts result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). Other actions occurring in the central Louisiana region include the realignment of units at Fort Polk; construction of a federal correctional facility near Pollock, 10 miles north of the City of Alexandria; and completion of the Alexandria urban segment of Interstate 49. Cumulative impacts of these actions would be negligible for all environmental resources, with the exception of regional air quality. Therefore, discussion of cumulative impacts is provided only in the air quality section.

Means of mitigating adverse environmental impacts that may result from implementation of the Proposed Action and alternatives are discussed as required by the National Environmental Policy Act (NEPA). Mitigation measures are suggested for those components likely to experience substantial and adverse changes with any or all of the alternatives. Potential mitigation measures depend on the particular resource affected. In general, however, mitigation measures are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.20) as actions that include:

(a) Avoiding the impact altogether by not taking an action or certain aspect of the action

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action

(e) Compensating for the impact by replacing or providing substitute resources or environments.

A discussion of the effectiveness of mitigation measures is included for applicable resource areas. If appropriate, the probability of success for a particular mitigation is also discussed.

Although base reuse will be decided by the property recipients, this EIS evaluates the full range of reasonably foreseeable reuses and their environmental impacts. Alternatives were defined for this analysis on the basis of (1) plans of the local community and interested individuals, (2) general land use planning considerations, and (3) Air Force-generated plans.

Reuse scenarios considered in this EIS have been sufficiently detailed to permit environmental analysis. Initial concepts and plans were taken as starting points for the scenarios that were analyzed. Available information on any reuse alternative was then supplemented with economic, demographic, transportation, and other planning data to provide a reuse scenario for analysis.

4.2 LOCAL COMMUNITY

This section presents the potential effects on local communities resulting from disposal and reuse of England Air Force Base (AFB).

4.2.1 Community Setting

Socioeconomic effects are addressed only to the extent that they are interrelated with the biophysical environment. A complete assessment of socioeconomic effects is presented in the *Socioeconomic Impact Analysis Study, Disposal and Reuse of England Air Force Base, Louisiana* (U.S. Air Force 1992e). Employment and population generated by implementation of the Proposed Action and each alternative are discussed in this section. The closure baseline projects employment levels of 50 direct jobs (jobs that are specific to reuse) and 20 secondary jobs (jobs that exist because of direct employment) for the year 1993 to remain constant through 2013 for the No-Action Alternative. The Region of Influence (ROI) (i.e., Rapides Parish) population for the closure baseline and postclosure conditions is estimated to be 122,327 for 1993 and 122,627 for 2013, an increase of 300 persons (0.2%).

This analysis recognizes the potential for community impacts arising from "announcement effects" stemming from information regarding the base's closure or reuse. Such announcements may affect the communities' perceptions and, in turn, could have important local economic effects. An example would be the inmigration of people anticipating employment with one of the reuse options. If it were later announced that the No-Action Alternative was chosen, many of the newcomers would leave the area to seek employment elsewhere. Such an effect could, therefore, result in an initial, temporary increase in population followed by a decline in population as people leave the area. However, this scenario is not considered realistic for any of the reuse options proposed for England AFB.

To provide a basis for comparison of the Proposed Action, reuse alternatives, and the No-Action Alternative, the influencing factors and resulting impacts are reported for the property available for disposal. No facilities will be retained by the Air Force at England AFB. Baseline employment directly related to the base property identified for disposal consists of 50 personnel associated with the operating location (OL) and an additional 20 secondary jobs. The following sections describe employment and population effects of each reuse alternative relative to this baseline.

4.2.1.1 Proposed Action

Employment resulting from the Proposed Action would begin in 1993 and increase through the year 2013. The Proposed Action would generate a total of 1,331 jobs (729 direct and 602 secondary) by 1998 in Rapides Parish. A peak of approximately 100 construction-related jobs would be generated between 1993 and 1998 for the Proposed Action. By 2013, employment related to the Proposed Action would total 3,311, consisting of 1,986 direct and 1,325 secondary jobs, an increase of 6.3 percent over the projected baseline employment of 52,661 in 2013 (Figure 4.2-1). The labor force in Rapides Parish would provide most of the employees necessary for the proposed reuses.

By 1998, it is estimated that with the Proposed Action, the baseline population in Rapides Parish would increase by approximately 180 (0.1%). The population would gradually increase over the next 15 years. By 2013, the parish population would increase by 1,411 (1.2% increase over the baseline projection of 122,627) to a total of 124,038 (Figure 4.2-2). Alexandria and Pineville would be most affected by the population increase. By 2013, Alexandria's population would increase to 45,913 (2.2% increase over baseline projections) and Pineville's population to 11,392 (2.5% increase).

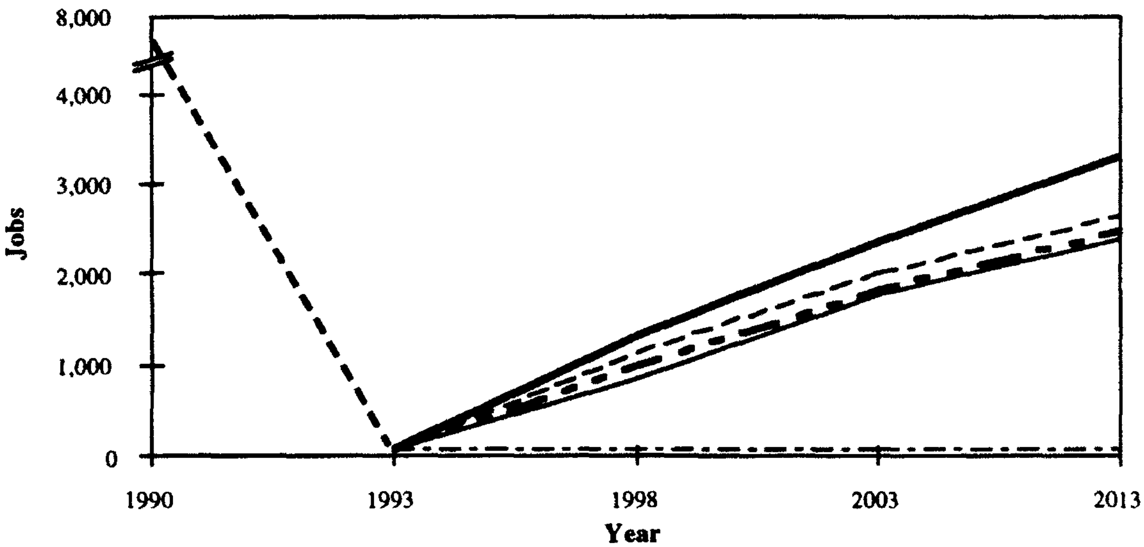
4.2.1.2 General Aviation Alternative

By 1998, direct and secondary employment resulting from the General Aviation Alternative would be 993 (583 direct and 410 secondary jobs). By the end of 2013, the General Aviation Alternative would result in an estimated 2,492 project-related jobs, 1,545 direct and 947 secondary. This represents a 4.7 percent increase over the projected baseline employment of 52,661 in 2013.

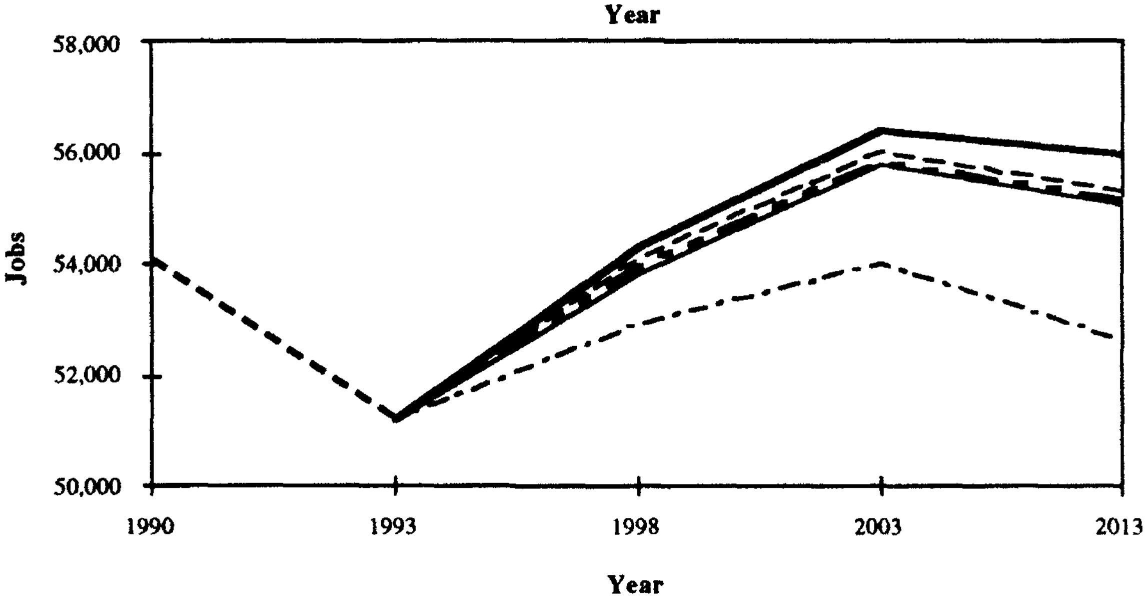
Between 1993 and 1998, the population in Rapides Parish is projected to increase by 140 (0.1%). By 2013, the population is projected to increase by approximately 390 to 123,016. This represents only a 0.3 percent change over the baseline projections. Alexandria would have a net increase of

Alternative	1993	1998	2003	2013
Proposed Action	70	1,331	2,372	3,311
General Aviation	70	993	1,819	2,492
Business/Technology Center	70	1,140	1,999	2,650
Recreation/Tourism	70	853	1,769	2,396
No Action	70	70	70	70

Reuse-Related Employment (Direct /Secondary) Effects



Reuse-Related Employment (Direct /Secondary) Effects



Total (ROI) Employment Including Reuse Effects

BR-ENG/038

EXPLANATION

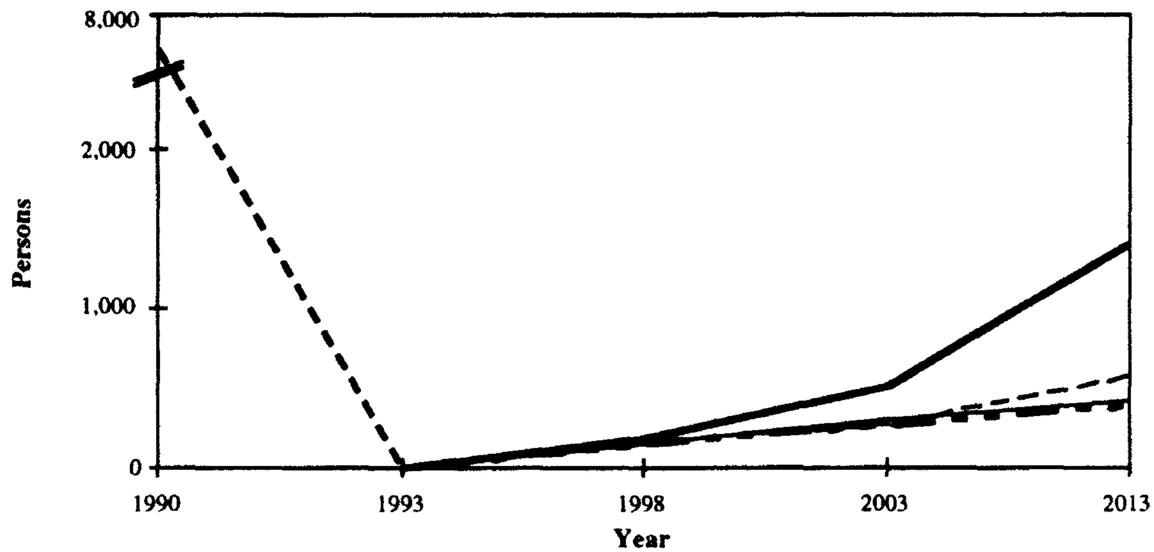
- No Action
- Proposed Action
- General Aviation
- Business/Technology Center
- Recreation/Tourism
- Preclosure

Rapides Parish Reuse-Related Employment Effects

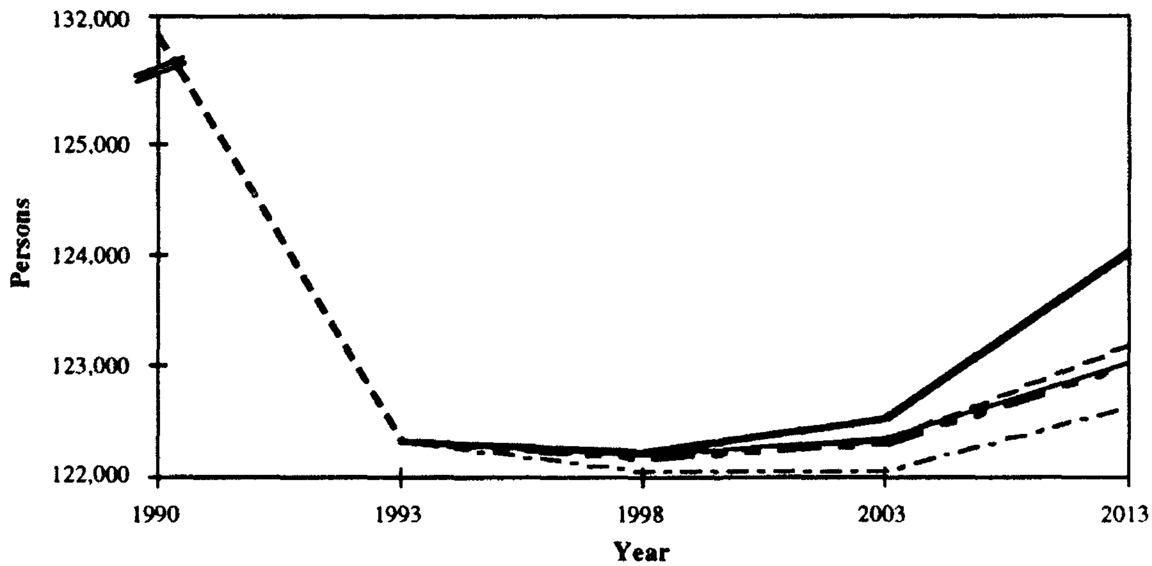
Figure 4.2-1

Alternative	1993	1998	2003	2013
Proposed Action	0	182	499	1,411
General Aviation	0	140	265	389
Business/Technology Center	0	163	273	573
Recreation/Tourism	0	145	303	423
No Action	0	0	0	0

Reuse-Related Population Effects



Reuse-Related Population Effects



Total (ROI) Population Including Reuse Effects

BR-ENG/039

EXPLANATION

- No Action
- Proposed Action
- General Aviation
- Business/Technology Center
- Recreation/Tourism
- Preclosure

Rapides Parish Reuse-Related Population Effects

Figure 4.2-2

approximately 270, and Pineville's population would increase by about 80 by 2013 (less than 1% change over baseline levels).

4.2.1.3 Business/Technology Center Alternative

The Business/Technology Center Alternative would generate 1,140 jobs (743 direct and 397 secondary) by 1998. By 2013, 2,650 jobs (1,724 direct and 926 secondary) would be generated, an increase of 4.7 percent over the projected baseline. Total employment in Rapides Parish is estimated to be 55,153 by the end of 2013.

By 1998, the population in Rapides Parish is expected to increase by approximately 165 (0.1%) with this alternative. This alternative would increase the population of Rapides Parish by approximately 275 (0.2%) by 2003. By 2013, the population of the parish would increase by about 575 (0.5% over projected baseline). Of this increase, approximately 400 persons are expected to live in Alexandria and 115 in Pineville, a 0.9 and 1.0 percent increase, respectively.

4.2.1.4 Recreation/Tourism Alternative

By 1998, the total number of jobs related to the Recreation/Tourism Alternative is estimated to be 853 (558 direct and 295 secondary). By 2013, this alternative would generate 2,396 jobs (1,570 direct and 826 secondary), an increase of 4.5 percent over the projected baseline employment level of 52,661.

With this alternative, Rapides Parish's population would be 123,050 by 2013, or an increase of about 425 (0.3% over the projected baseline population). Of this amount, approximately 295 persons would live in Alexandria and 85 in Pineville; these increases for both communities are less than 1 percent.

4.2.1.5 No-Action Alternative

With the No-Action Alternative, only caretaker status activities would occur at the base. It is estimated that the caretaker activities at England AFB would result in approximately 50 direct and 20 secondary jobs in Rapides Parish through 2013. There would be no net increase in population as a result of the No-Action Alternative. Total employment and population in Rapides Parish are projected to be 52,661 and 122,627, respectively, by 2013. The populations of Alexandria and Pineville are projected to be 44,925 and 11,110, respectively.

4.2.2 Land Use and Aesthetics

This section discusses the Proposed Action and alternatives relative to land use and aesthetics. Land use compatibility with aircraft noise is discussed in Section 4.4.4.

4.2.2.1 Proposed Action

Land Use. The Proposed Action would not result in any substantial change in the overall pattern of land use on the base. Specific land use changes associated with the Proposed Action would include the following:

- A portion of the existing airfield and flightline area would be converted to aviation support uses for the Joint Readiness Training Center (JRTC) Intermediate Staging Base (ISB) facilities and activities, and construction of a new passenger terminal complex. Several alternative sites are proposed for the terminal complex. Depending on the site selected, demolition of some existing buildings could be required.

- The existing construction debris/demolition landfill (industrial) area in the southern portion of the base would be used for expansion of the existing 9-hole golf course. The area east of this landfill, currently occupied by the small arms range, horse stables, and several other structures, would also be used for expansion of the golf course. These facilities would be demolished.

- A portion of the existing aviation support area north of the south aircraft parking apron would be converted to industrial uses.

- A portion of the existing community center area (commercial) would be converted to aviation support uses near the north aircraft parking apron.

- Three areas of the base containing Installation Restoration Program (IRP) sites, including the sewage lagoon and several landfills, are designated as vacant land and no reuses are proposed.

Land uses associated with the Proposed Action would be internally compatible and compatible with adjacent land uses in the City of Alexandria and unincorporated areas of Rapides Parish.

Zoning. There would be no conflicts between the Proposed Action and the current zoning of land adjacent to and in the vicinity of the base in the City of Alexandria; the zoning is Residential and Residential/Agricultural. There is no zoning in the unincorporated areas of Rapides Parish. The England Authority would have zoning and regulation powers for all land on the base. These powers would remain even with the annexation of the property by a municipality.

With the Proposed Action, Air Force Air Installation Compatible Use Zone (AICUZ) guidelines would be replaced by Federal Aviation Administration (FAA) land use compatibility criteria outlined in FAA Advisory Circulars, including *Noise Control and Compatibility Planning for Airports, Airport Master Plans*, and *Airport Design* (U.S. Department of Transportation, Federal Aviation Administration 1983, 1985b, 1989). Federal Aviation Regulation (FAR) Part 150 prescribes the procedures, standards, and methodologies governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs.

Changing from military to civilian aircraft operations would eliminate the current AICUZ Accident Potential Zones (APZs) for the base. In addition, the City of Alexandria *Airfield Compatibility (A-C) Zone* and the Rapides Parish *Airbase Landing Zone District* ordinances would need to be revised to specifically address a civilian commercial airport. A civilian airport would also require the application of FAA zoning criteria. FAA safety criteria differ from AICUZ guidelines. The FAA Runway Protection Zone (RPZ) at each end of the runway would be a fan-shaped area beginning 200 feet from the runway threshold. The dimensions of the RPZ are functions of the aircraft that will use the runway, the type of operations, and visibility minimums. For precision instrument approach runways, the RPZ would extend out 2,500 feet, with an inner width (near the runway) of 1,000 feet and an outer width of 1,750 feet. This RPZ would be 130 acres smaller than the current AICUZ clear zone.

General Plans. The Proposed Action would be compatible with *Alexandria 2010: A Comprehensive Development Strategy* (RM Plan Group 1992), recently adopted by the City of Alexandria. The plan identifies the reuse of the base as an aviation-related industrial and commercial center.

Aesthetics. The Proposed Action would not substantially alter the visual character of the base; offbase areas with views of the base would not be adversely affected. Proposed aviation support, industrial, and recreational uses that would change current land uses would not adversely affect existing views. Aviation support reuses would involve construction of a new terminal and require use of a portion of the airfield for the JRTC ISB. Industrial reuses would require the disturbance of approximately 15 acres in the northeastern portion of the base, and recreational reuses would require the conversion of a construction debris/demolition landfill area for an expanded golf course. The expanded golf course would increase green space on the base. These changes would not adversely affect the base's visual character.

Mitigation Measures. No mitigation measures would be required for the Proposed Action.

4.2.2.2 General Aviation Alternative

Land Use. The General Aviation Alternative would not result in any substantial change in the overall pattern of land use on the base. Specific land use changes associated with this alternative include the following:

- Three residential areas consisting of the dormitories/visitors' quarters would be converted to commercial uses as a component of the proposed regional conference center. The conference center would also require conversion of many existing commercial center facilities.

- A portion of the existing administrative office complex (commercial) would be converted to a vocational-technical school (education).

- A portion of the existing airfield would be converted to agricultural uses such as hay cropping or farming of typical regional crops.

- The existing construction debris/demolition landfill (industrial) area in the southern portion of the base would be used for expansion of the existing 9-hole golf course. The area east of this landfill, currently occupied by the small arms range, horse stables, and several other structures, would also be used for expansion of the golf course. These facilities would be demolished.

- Existing aviation support uses along the north flightline area would be converted to office space (commercial).

- Three areas of the base containing IRP sites, including the sewage lagoon and several landfills, are designated as vacant land and no reuses are proposed.

- The existing military family housing area would be reused for retirement community/senior citizen housing in the area east of the golf course clubhouse and for market housing in the portions of the military housing area in the far eastern portion of the base.

Land uses associated with the General Aviation Alternative would be internally compatible and compatible with adjacent land uses in the City of Alexandria and unincorporated portions of Rapides Parish.

Zoning. The General Aviation Alternative would be consistent with the City of Alexandria's current zoning in the areas adjacent to and in the vicinity of the base. The majority of the adjacent land in the City of Alexandria is zoned for Residential and Residential/Agricultural. The unincorporated areas of Rapides Parish are not zoned. Because there are no established zoning regulations in these areas, no conflicts would exist. The England Authority would have zoning and regulation powers for all base property. These powers would remain even if the property were annexed by a municipality.

With this alternative, AICUZ guidelines would be replaced by FAA land use compatibility criteria outlined in FAA Advisory Circulars, including *Noise Control and Compatibility Planning for Airports, Airport Master Plans, and Airport Design* (U.S. Department of Transportation, Federal Aviation Administration 1983, 1985b, 1989). FAR Part 150 prescribes the procedures, standards, and methodologies governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs.

As with the Proposed Action, changing from military to civilian aircraft operations would eliminate the current AICUZ APZs for the base. In addition, the City of Alexandria *Airfield Compatibility (A-C) Zone* and the Rapides Parish *Airbase Landing Zone District* ordinances would need to be revised to specifically address a civilian commercial airport. A civilian airport would also require the application of FAA zoning criteria as described for the Proposed Action.

General Plans. The General Aviation Alternative would be compatible with the *Alexandria 2010* plan; the plan identifies the reuse of the base as an aviation-related industrial and commercial center.

Aesthetics. The General Aviation Alternative would not substantially alter the visual character of the base; offbase areas with views of the base would not be adversely affected. The uses proposed for this alternative are arranged to incorporate existing buildings into uses that are similar to the existing character of the base. The expansion of the existing 9-hole golf course to 18 holes would increase the onbase green space by approximately 70 acres.

Mitigation Measures. No mitigation measures would be required for the General Aviation Alternative.

4.2.2.3 Business/Technology Center Alternative

Land Use. The Business/Technology Center Alternative would result in a substantial change in the overall land use patterns on the base, but reuses in the developed portion of the base are arranged to incorporate existing buildings into land uses that are similar to their existing uses. Specific land use changes associated with this alternative would include the following:

- The existing airfield area would be converted to agricultural uses such as hay cropping, farming of typical regional crops, aquaculture, or nurseries. Most of the existing runways and taxiways would be left intact.

- Aviation support areas surrounding the south aircraft parking apron would be converted to a vocational-technical school (education).

- Aviation support areas in the western portion of the developed area would be converted to industrial (manufacturing) uses.

- Commercial land uses would be located in the central portion of the developed area, and would include a regional conference center, administrative offices, and a commercial support area.

- The existing military family housing area would be reused entirely as market housing.

- Recreational facilities north of the golf course and Flying Tiger Heritage Park would be expanded to include additional athletic fields and courts. Removal of some existing buildings and the base trailer park would be required.

- The existing construction debris/demolition landfill (industrial) area in the southern portion of the base would be used for expansion of the golf course. The area east of this landfill, currently occupied by the small arms range, horse stables, and several other structures, would also be used for expansion of the golf course. These facilities would be demolished.

- Three areas of the base containing IRP sites, including the sewage lagoon and several landfills, are designated as vacant land and no reuses are proposed.

Land uses associated with the Business/Technology Center Alternative would be internally compatible and compatible with adjacent land uses in the City of Alexandria and unincorporated portions of Rapides Parish.

Zoning. The Business/Technology Center Alternative would be compatible with the City of Alexandria's zoning in the areas adjacent to and in the vicinity of the base; these areas are zoned Residential and Residential/Agricultural. Adjacent areas in unincorporated Rapides Parish are not zoned; therefore, no zoning conflict would exist. The England Authority would have zoning and regulation powers for all base property. These powers would remain even with the annexation of the property to a municipality.

General Plans. The Business/Technology Center Alternative would not be compatible with the *Alexandria 2010* plan. The plan identifies base reuse as an aviation-related industrial and commercial center. Although no aviation-related reuses are proposed for this alternative, the agricultural uses proposed for the airfield portion of the base would be compatible with offbase land uses proposed in the plan (i.e., agricultural and residential).

Aesthetics. The Business/Technology Center Alternative would not adversely alter the visual character of the base; offbase areas with views of the base would not be adversely affected by proposed reuses. The proposed land uses for this alternative in the developed portion of the base are arranged to incorporate existing buildings into uses that maintain the existing visual character of the base. The expansion of the golf course from 9 holes to

18 holes and use of the airfield for agriculture would increase the onbase green space.

Mitigation Measures. No mitigation measures would be required with the Business/Technology Center Alternative.

4.2.2.4 Recreation/Tourism Alternative

Land Use. The Recreation/Tourism Alternative would result in a substantial change in the overall land use patterns on the base, but the layout of the land uses in the developed area is designed to incorporate existing buildings into land uses that are similar to their existing uses. Specific land use changes associated with this alternative include the following:

- The existing airfield area would be converted to agricultural uses such as hay cropping, farming of typical regional crops, aquaculture, or nurseries; recreational uses, including two golf courses and additional recreational fields; and an outdoor performance facility (commercial). Most of the existing runways and taxiways would be left intact.

- The existing construction debris/demolition landfill (industrial) area in the southern portion of the base would be used for expansion of the existing golf course. The area east of this landfill, currently occupied by the small arms range, horse stables, and several other structures, would also be used for expansion of the golf course. These facilities would be demolished.

- Existing aviation support areas surrounding the south aircraft parking apron would be converted to a vocational-technical school (education).

- Commercial land uses would cover most of the western portion of the developed area adjacent to the flightline. These areas currently include aviation support uses. The far western portion would be used for office uses. A church camp/day camp would be located in the central portion of the commercial area that currently consists of dormitories, the base chapel, the noncommissioned officers' club, and several smaller buildings. A commercial support center would occupy the location of the existing base exchange store, commissary, bank and credit union, post office, and various recreational/leisure facilities.

- Three areas of the base containing IRP sites, including the sewage lagoon and several landfills, are designated as vacant land and no reuses are proposed.

Land uses associated with the Recreation/Tourism Alternative would be internally compatible and compatible with the adjacent land uses in the City of Alexandria and unincorporated areas of Rapides Parish.

Zoning. The Recreation/Tourism Alternative would be compatible with the City of Alexandria's zoning in areas adjacent to and in the vicinity of the base; these areas are zoned Residential and Residential/Agricultural. Adjacent areas within unincorporated areas of Rapides Parish are not zoned; therefore, no conflict would exist. The England Authority would have zoning and regulation powers for all base property. These powers would remain even if the property were annexed by a municipality.

General Plans. The Recreation/Tourism Alternative would not be compatible with the *Alexandria 2010* plan. The plan identifies the reuse of the base for an aviation-related industrial and commercial center. This alternative would have no aviation-related uses. The existing airfield would be converted to recreational and agricultural uses. Although no aviation-related reuses are proposed, the agricultural, commercial, and recreational reuses proposed would be compatible with offbase land uses proposed in the plan (i.e., agricultural and residential). The future land use plan in the *Alexandria 2010* plan designates the area north of the proposed theme park/water park location for park and recreational uses.

Aesthetics. The Recreation/Tourism Alternative would not adversely alter the visual character of the base. The only exception may be caused by the type of structures in the theme park/water park. Offbase areas with views of the base could be affected if the theme park/water park is not constructed in a visually compatible manner. The uses with this alternative in the developed area of the base are arranged to incorporate existing buildings into uses that would maintain the existing visual character of the base. The expansion of the existing 9-hole golf course to 18 holes, the construction of two additional 18-hole golf courses, and use of portions of the airfield for agricultural purposes would substantially increase green space on the base.

Mitigation Measures. No mitigation measures would be required with the Recreation/Tourism Alternative.

4.2.2.5 No-Action Alternative

Land Use. No physical changes in onbase land use would occur with the No-Action Alternative. Functionally, there would be no use of base land or facilities. OL personnel would continue to maintain the buildings and grounds. Because the federal government would retain ownership of the base with the No-Action Alternative, the property would remain outside the jurisdiction of the City of Alexandria and Rapides Parish. The No-Action Alternative would not be consistent with the *Alexandria 2010* plan, which identifies reuse of the base for aviation-related industrial and commercial activities.

Aesthetics. The No-Action Alternative would not affect the visual and aesthetic quality of the base or the surrounding area. Some landscaped portions of the base would receive less-intensive maintenance. The absence of human activity on the base would enhance and accelerate the return to natural conditions in some areas.

4.2.3 Transportation

The effects of the Proposed Action and alternatives on each component of the transportation system, including roadways, airspace and air traffic, and railroads, are presented in this section.

Roadways. Reuse-related effects on roadway traffic were assessed by estimating the number of trips generated by each land use considering employees, visitors, residents, and service vehicles associated with construction and all other onsite activities for the Proposed Action and each alternative. Principal trip-generating land uses include industrial, office, commercial, residential, and airport. These trips were distributed to the roadway system based on proposed land uses and existing travel patterns. This analysis is based on daily trips as distributed, existing data on roadway capacities, traffic volumes, and standards established by state and local transportation agencies.

The analysis was derived using information from state and local government agencies, including the Louisiana Department of Transportation and Development, Rapides Area Planning Commission, the Rapides Parish Airport Authority, and railroad companies.

The number of vehicle trips expected as a result of specific land uses on the site was estimated for the years 1993, 1998, 2003, and 2013 on the basis of direct onsite jobs and other attributes of onsite land use, such as the number of dwelling units, projected airport passenger volumes, and proposed commercial and industrial development.

Airspace/Air Traffic. The airspace analysis examines the type and level of aircraft operations projected for the Proposed Action and alternatives and compares them to how the airspace was configured and used under the preclosure reference. The impact analysis considers the relationship of the projected aircraft operations to the operational capacity of the airport, using criteria that have been established by the FAA for determining airport service volumes. Potential effects on airspace use were assessed based on the extent to which the Proposed Action or alternatives could (1) require modifications to the airspace structure or air traffic control systems and/or facilities; (2) restrict, limit, or otherwise delay other air traffic in the region; or (3) encroach on other airspace areas and uses.

The FAA is ultimately responsible for evaluating the specific effects that the reuse of an airport will have on the safe and efficient use of navigable airspace by aircraft. Such a study is based on details from the airport proponent's

Airport Plan and consists of an airspace analysis, a flight safety review, and a review of the potential effect of the proposal on air traffic control and air navigational facilities. Once this study is completed, the FAA can then determine the actual requirements for facilities, terminal and enroute airspace, and instrument flight procedures.

Railroads. It was assumed that the Proposed Action and alternatives would not result in any increase in ridership on AMTRAK, because the closest AMTRAK station to the Alexandria/Pineville area is 80 miles away in Lafayette. A small increase in local freight service is projected for the Proposed Action and alternatives. The rail spur that enters the base from a Union Pacific Railroad mainline may be used to support specific reuses, but the level of use would not be expected to affect local freight service.

4.2.3.1 Proposed Action

Roadways. The Proposed Action would generate approximately 7,950 trips per day by 2013 (Table 4.2-1). The major land uses generating traffic would include aviation support, including the regional airport; industrial, including the truck driving school; commercial, including the office complex and conference center; residential; and recreational, including the expanded golf course. The regional airport would generate approximately 600 trips per day when fully operational and the truck driving school would generate approximately 200 truck trips per day on local roads.

Table 4.2-1

Summary of Total Daily Trips Generated by Various Reuse Alternatives

Reuse Alternative	1993	1998	2003	2013
Proposed Action	200	2,916	5,560	7,944
General Aviation	200	2,332	4,448	6,180
Business/Technology Center	200	2,972	5,200	6,896
Recreation/Tourism	200	2,232	4,628	6,280
No Action	200	200	200	200

Note: Daily trips generated are defined as one-way vehicle trips.

The roadways identified for this study as key roads, and the percentage of base-generated traffic they are projected to carry, include Airbase Road north of State Highway 498 (40%), State Highway 1 east of Airbase Road (35%), State Highway 498 (20%), Vandenberg Drive south of State Highway 496 (22%), State Highway 496 east of Vandenberg Drive (15%), and State Highway 28 east of Vandenberg Drive (20%). With completion of the

Alexandria urban segment of Interstate 49 by 1996, the traffic volumes on State Highway 1 will decrease substantially. For the traffic analysis for 1998 through 2013, it was assumed that most of the traffic allocated to State Highway 1 east of Airbase Road would use Interstate 49.

Based on a distribution of these trips over these roadways, the projected average daily traffic (ADT) associated with the Proposed Action would not change the level of service (LOS) for any of the offbase roads (Table 4.2-2). All roads would continue to operate at LOS A (Table 4.2-2). Traffic volumes on these roads would not exceed preclosure conditions.

Table 4.2-2

Projected Average Daily Traffic and Level of Service
Proposed Action

Road Segment	Capacity	1993	1998	2003	2013	LOS
State Highway 1 (East of Airbase Road)	31,000	9,308	9,471	9,683	9,874	A
State Highway 1 (West of Airbase Road)*	15,000	5,510	5,617	5,722	5,818	A
Vandenberg Drive (South of State Highway 496)	15,000	3,593	4,191	4,772	5,297	A
State Highway 28 *(East of Vandenberg Drive)*	31,000	9,053	9,596	10,125	10,602	A
State Highway 28 (West of Vandenberg Drive)	15,000	3,949	4,003	4,056	4,104	A
State Highway 496 (East of Vandenberg Drive)	15,000	2,724	3,131	3,528	3,886	A
State Highway 498 (East of Airbase Road)	15,000	3,449	3,992	4,521	4,998	A

Note: *Assumes reduction in baseline ADT resulting from completion of Interstate 49.

Although all roads providing access to the base would operate at LOS A, a new road is proposed to provide better access to the industrial and aviation support areas. Construction of this access road would involve the extension of Frank Andrews Boulevard on England AFB beyond the base boundary to Airbase Road via 6th Street (Chapter 2.0, Figure 2.3-1).

With the extension of Frank Andrews Boulevard, realignment of the intersection of Andrews Boulevard/6th Street and Airbase Road would provide more direct access from State Highway 1 and Interstate 49 (when it is completed) to the areas of the base proposed for industrial, commercial, and aviation support reuses, including the truck driver training school and a new passenger terminal complex. With the existing access roads, traffic associated with such reuses would have to pass through the residential, medical, educational, and recreational areas of the base (i.e., through the existing base gates).

Because of the existing characteristics of the onbase road network (i.e., narrow streets and small turning radius intersections), additional onbase road improvements would be required to support a large trucking operation or other industrial reuses in the northeastern corner of the base, including development of a more direct access route to and from this area which would connect with Frank Andrews Boulevard.

Airspace. Aviation activities identified for the Proposed Action include air passenger service, general aviation, air cargo, and military operations associated with the JRTC ISB. With the Proposed Action, commercial air passenger and general aviation operations would be relocated to the base from Alexandria Esler Regional Airport, the existing regional airport. The projected number of operations and the fleet mix associated with the Proposed Action are presented in Table 2.2-4 (Chapter 2.0). It is projected that 29,120 air operations would occur with the Proposed Action in 1998, increasing to 36,030 by 2013. Because the number of aircraft operations conducted at the base exceeded 42,300 in 1991, no airfield constraints are expected with conversion of the airfield to the uses defined for the Proposed Action, including the capability of the airfield to handle this number of operations.

It was assumed that similar radar coverage and navigational aids would be provided at the airport as existed prior to base closure to maintain an equivalent level of air traffic control services for the reuse aviation activities. Airspace requirements for the Proposed Action should be the same as those in effect prior to base closure, with Houston Air Route Traffic Control retaining control of this area (Section 3.2.3.2).

Air Transportation. With the Proposed Action, the existing regional airport would be transferred to the base. Facilities that would be constructed or renovated at England AFB for a new airport complex, including a passenger terminal, were assumed to be similar to the existing airport facilities at Alexandria Esler Regional Airport (i.e., sized to handle the existing and projected passenger levels).

The Proposed Action is not expected to affect air transportation in the region. Based on historic and projected passenger enplanements at Alexandria Esler Regional Airport, enplanements generated with the Proposed Action would not affect the existing commercial airline service structure. With closure of the base and the realignment of units at Fort Polk, baseline closure enplanements are expected to be approximately 15 percent lower (about 10,000 enplanements) than existing levels. Enplanements generated by reuse of the base and associated population growth in the ROI would total less than 1,000 based on existing per capita rates.

The existing private airports in the ROI would probably not experience a loss of patronage with the conversion of England AFB to an airport with general aviation facilities. Unless accommodations were better and/or fees were less, private aircraft owners would not likely be inclined to leave the airport they are currently using.

Mitigation Measures. No mitigation measures would be required for the Proposed Action.

4.2.3.2 General Aviation Alternative

Roadways. The General Aviation Alternative would generate approximately 6,200 trips per day by 2013 (Table 4.2-1). The major land uses generating traffic would include aviation support, including the general aviation facilities; industrial; commercial, including the office complex and conference center; residential; and recreational, including the expanded golf course.

The roadways identified for the Proposed Action as key roads and the percentage of reuse-generated traffic they are projected to carry would be the same for this alternative. Based on a distribution of generated trips for these roadways, the projected ADT associated with this alternative would not change the LOS for any offbase roads (Table 4.2-3). These roads would continue to operate at LOS A. Traffic volumes on these roads would not exceed preclosure conditions.

Table 4.2-3

Projected Average Daily Traffic and Level of Service General Aviation Alternative

Road Segment	Capacity	1993	1998	2003	2013	LOS
State Highway 1 (East of Airbase Road)	31,000	9,308	9,425	9,594	9,732	A
State Highway 1 (West of Airbase Road)*	15,000	5,510	5,593	5,678	5,747	A
Vandenberg Drive (South of State Highway 496)	15,000	3,593	4,062	4,528	4,909	A
State Highway 28 (East of Vandenberg Drive)	31,000	9,053	9,479	9,903	10,249	A
State Highway 28 (West of Vandenberg Drive)	15,000	3,949	3,992	4,034	4,069	A
State Highway 496 (East of Vandenberg Drive)	15,000	2,724	3,044	3,361	3,621	A
State Highway 498 (East of Airbase Road)	15,000	3,449	3,875	4,299	4,645	A

Note: *Assumes reduction in baseline ADT resulting from completion of Interstate 49.

Roadway improvements for this alternative, including the extension of Frank Andrews Boulevard beyond the base boundary to Airbase Road, would be the same as described for the Proposed Action.

Airspace. Aviation activities identified for the General Aviation Alternative include general aviation and air carg The projected number of operations and the fleet mix associated with this alternative are presented in Table 2.3-4

(Chapter 2.0). It is projected that approximately 10,700 air operations would occur in 1998, increasing to 13,950 by 2013. Because the number of aircraft operations conducted at the base exceeded 42,300 in 1991, no airfield constraints are expected with conversion of the airfield to the uses defined for this alternative.

It was assumed that similar radar coverage and navigational aids would be provided for the airport as existed prior to base closure to maintain an equivalent level of air traffic control services for reuse aviation activities. Airspace requirements for the General Aviation Alternative should be the same as those in effect prior to base closure, with Houston Air Route Traffic Control retaining control of this area (Section 3.2.3.2).

Air Transportation. With this alternative, the commercial operations at Alexandria Esler Regional Airport would not be relocated to the base. Effects on air transportation demand, however, would be similar to those described for the Proposed Action.

Mitigation Measures. No mitigation measures would be required for this alternative.

4.2.3.3 Business/Technology Center Alternative

Roadways. It is estimated that the Business/Technology Center Alternative would generate approximately 6,900 trips per day by 2013 (Table 4.2-1). The major land uses generating traffic would include industrial, including manufacturing and warehousing; commercial, including an office complex and conference center; residential; and recreational, including the expanded golf course.

The roadways identified for the Proposed Action as key roads and the percentage of reuse-generated traffic they are projected to carry would be the same for this alternative. Based on a distribution of the generated trips over these roadways, the projected ADT associated with this alternative would not change the LOS for any offbase roads (Table 4.2-4). These roads would continue to operate at LOS A. Traffic volumes on these roads would not exceed preclosure conditions.

Roadway improvements for this alternative, including the extension of Frank Andrews Boulevard beyond the base boundary to Airbase Road, would be the same as described for the Proposed Action.

Table 4.2-4

Projected Average Daily Traffic and Level of Service
Business/Technology Center Alternative

Road Segment	Capacity	1993	1998	2003	2013	LOS
State Highway 1 (East of Airbase Road)	31,000	9,308	9,476	9,654	9,790	A
State Highway 1 (West of Airbase Road)*	15,000	5,510	5,619	5,708	5,776	A
Vandenberg Drive (South of State Highway 496)	15,000	3,593	4,203	4,693	5,066	A
State Highway 28 (East of Vandenberg Drive)	31,000	9,053	9,607	10,053	10,392	A
State Highway 28 (West of Vandenberg Drive)	15,000	3,949	4,004	4,049	4,083	A
State Highway 496 (East of Vandenberg Drive)	15,000	2,723	3,139	3,473	3,727	A
State Highway 498 (East of Airbase Road)	15,000	3,449	4,003	4,449	4,788	A

Note: *Assumes reduction in baseline ADT resulting from completion of Interstate 49.

Airspace. The use of England AFB for nonaviation uses would not affect air traffic and airspace use in the ROI.

Air Transportation. With this alternative, the commercial and general aviation operations at Alexandria Esler Regional Airport would not be relocated to the base. Effects on air transportation demand, however, would be similar to those described for the Proposed Action.

Mitigation Measures. No mitigation measures would be required for this alternative.

4.2.3.4 Recreation/Tourism Alternative

Roadways. It is estimated that this alternative would generate approximately 6,300 trips per day by 2013 (Table 4.2-1). The major land uses generating traffic would include industrial; commercial, including the office complex and conference center; residential; and recreational, including the expanded golf course facilities and the theme park/water park.

The roadways identified for the Proposed Action as key roads and the percentage of base-generated traffic they are projected to carry would be the same for this alternative. Based on a distribution of the generated trips over these roadways, the projected ADT associated with this alternative would not change the LOS for offbase roads (Table 4.2-5). These roads would continue to operate at LOS A. Traffic volumes on these roads would not exceed preclosure conditions.

Table 4.2-5

**Projected Average Daily Traffic and Level of Service
Recreation/Tourism Alternative**

Road Segment	Capacity	1993	1998	2003	2013	LOS
State Highway 1 (East of Airbase Road)	31,000	9,308	9,417	9,608	9,740	A
State Highway 1 (West of Airbase Road)*	15,000	5,310	5,589	5,685	5,751	A
Vandenberg Drive (South of State Highway 496)	15,000	3,593	4,040	4,597	4,931	A
State Highway 28 (East of Vandenberg Drive)	31,000	9,053	9,459	9,939	10,269	A
State Highway 28 (West of Vandenberg Drive)	15,000	3,949	3,990	4,038	4,071	A
State Highway 496 (East of Vandenberg Drive)	15,000	2,723	3,028	3,387	3,635	A
State Highway 498 (East of Airbase Road)	15,000	3,449	3,855	4,355	4,665	A

Note: *Assumes reduction in baseline ADT resulting from completion of Interstate 49.

Roadway improvements for this alternative, including the extension of Frank Andrews Boulevard beyond the base boundary to Airbase Road, would be the same as described for the Proposed Action.

Airspace. The use of England AFB for nonaviation uses would not affect air traffic and airspace use in the ROI.

Air Transportation. With this alternative, the commercial and general aviation operations at Alexandria Esler Regional Airport would not be relocated to the base. Effects on air transportation demand, however, would be similar to those described for the Proposed Action.

Mitigation Measures. No mitigation measures would be required for this alternative.

4.2.3.5 No-Action Alternative

With the No-Action Alternative, onbase roads would no longer be used except by OL personnel. It is projected that the OL would contribute less than 200 trips per day to the local road system. All offbase roads would operate at LOS A.

4.2.4 Utilities

Direct and indirect changes in future utility demand for each alternative were estimated based on historic, preclosure, and per capita average daily use on England AFB and in the Alexandria/Pineville area. These factors were applied to projections of the number of future residents and employees associated with each alternative. The projected changes in utility demand for closure, as well as 5, 10, and 20 years after closure, are presented in Table 4.2-6. The forecasted ROI demand values represent the No-Action Alternative, and generally reflect the change expected in utility use in the area without redevelopment of the base. The other alternatives reflect the growth anticipated as a result of the reuse alternatives.

All of the utilities considered in this analysis are currently operating below their designed system capacities. Base closure and the resulting decrease in population in the ROI will provide additional excess capacity. Utility demands for the Proposed Action and each alternative discussed in this section would not be greater than the preclosure demands in the ROI; therefore, system capacity would not be exceeded for any utility for any of the alternatives.

For each of the reuse alternatives analyzed in this section, the following assumptions were made:

- The site would be serviced by the same local utility purveyors.

- If necessary, any specific infrastructure improvements required, and the associated costs of those improvements, would be borne directly or indirectly by future site developers.

- Future site developers would undertake any corrective actions necessary to comply with City of Alexandria requirements, including modifications to the existing onbase wastewater collection system and construction of pretreatment facilities; wastewater flows from the site would remain connected to the City of Alexandria treatment system.

- Onsite demand impacts are expected to be relatively small; therefore, the project-related usage is included in the total demand and not further differentiated by individual locations.

- Property recipients who operate any of the four categories of municipal or industrial stormwater discharges will have to obtain stormwater discharge permits from the Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES). These five categories include (1) discharges which have NPDES permits issued as of February 1987; (2) discharges associated with industrial activity; (3) discharges from a municipal separate stormwater system serving a population of 100,000 or more; and (4) other discharges that contribute to a violation of a water quality standard or significantly adds pollutants to waters of the United States. If a facility has a zero stormwater discharge due to discharges to a detention pond only, then a permit would not

Table 4.2-6

Total Projected Utility Demand in the Region of Influence

	1998	Percent Increase	2003	Percent Increase	2013	Percent Increase
Water Demand (MGD)						
Projected ROI Demand[1]	20.64		20.75		21.22	
Proposed Action	0.12	0.6	0.27	1.3	0.54	2.5
General Aviation Alternative	0.10	0.5	0.19	0.9	0.26	1.2
Business/Technology Center Alternative	0.12	0.6	0.21	1.0	0.32	1.5
Recreation/Tourism Alternative	0.10	0.5	0.20	1.0	0.27	1.3
Wastewater (MGD)						
Projected ROI Generation[1]	8.93		8.98		9.25	
Proposed Action	0.09	1.0	0.19	2.0	0.38	3.9
General Aviation Alternative	0.07	0.8	0.13	1.4	0.18	1.9
Business/Technology Center Alternative	0.08	1.0	0.14	1.6	0.22	2.4
Recreation/Tourism Alternative	0.07	0.7	0.14	1.5	0.19	2.0
Solid Waste (tons/day)						
Projected ROI Generation[1]	140.40		141.20		144.40	
Proposed Action	2.23	1.6	4.60	3.2	8.14	5.3
General Aviation Alternative	1.82	1.3	3.38	2.3	4.74	3.2
Business/Technology Center Alternative	2.22	1.6	3.86	2.7	5.60	3.7
Recreation/Tourism Alternative	1.72	1.2	3.57	2.5	4.88	3.3
Electricity (million kWh/day)						
Projected ROI Demand[1,2]	17.80		17.90		18.30	
Proposed Action	0.08	0.5	0.22	1.2	0.56	3.0
General Aviation Alternative	0.07	0.4	0.12	0.7	0.18	1.0
Business/Technology Center Alternative	0.08	0.4	0.13	0.7	0.25	1.4
Recreation/Tourism Alternative	0.07	0.4	0.14	0.8	0.19	1.0
Natural Gas (MMcf/day)						
Projected ROI Demand[1]	6.70		6.80		6.90	
Proposed Action	0.06	1.0	0.14	2.0	0.27	3.7
General Aviation Alternative	0.05	0.8	0.10	1.4	0.14	2.0
Business/Technology Center Alternative	0.06	0.9	0.11	1.6	0.17	2.4
Recreation/Tourism Alternative	0.05	0.7	0.10	1.5	0.14	2.0

Notes: [1]Represents total demand projected for or generated by the ROI for the years indicated, based on projected population. Also represents the total demand expected with the No-Action Alternative.
[2]ROI demand includes the City of Alexandria and the Central Louisiana Electric Company service area.

be required so long as it is not anticipated that the detention pond could overflow.

Per capita demand values were based on population data for the cities of Alexandria and Pineville. Per capita demand values were derived by dividing total utility demand data by the population in each jurisdiction for each year addressed.

4.2.4.1 Proposed Action

Water. With the Proposed Action, onsite water demand would be 0.23 million gallons per day (MGD) by 2013. Water demand in the cities of Alexandria and Pineville would increase over the projected ROI demand. By 1998, the increase in demand associated with the Proposed Action would average 0.03 MGD in Alexandria, 0.009 MGD in Pineville, and 0.08 MGD on the base. By 2013, the increase in demand would average approximately 0.25 MGD in Alexandria, 0.07 MGD in Pineville, and 0.23 MGD on the base.

Infrastructure changes would not be required because employment generated by the Proposed Action would be less than the preclosure onbase employment, and the Alexandria/Pineville area would not experience any substantial population changes with the Proposed Action. Alterations to the water supply system would depend on specific reuse requirements and any plans the purveyor may have to change the existing onbase supply infrastructure.

Wastewater. The Proposed Action would result in the generation of approximately 0.15 MGD of wastewater on the site by 2013. Wastewater treatment levels in the Alexandria and Pineville service areas would increase as a result of the Proposed Action over the projected ROI generation rates. By 1998, the Proposed Action would result in the generation of 0.02 MGD in Alexandria, 0.006 MGD in Pineville, and 0.06 MGD on the base. By 2013, the increase in wastewater generation would average 0.17 MGD in Alexandria, 0.05 MGD in Pineville, and 0.15 MGD on the base.

No additional infrastructure would be required because the employment generated by the Proposed Action would be less than the preclosure onbase employment, and Alexandria and Pineville would not experience any substantial direct or indirect population changes as a result of the Proposed Action. Depending on the specific reuses that may result with the Proposed Action, industrial pretreatment permits may be required by the City of Alexandria.

Solid Waste. Onsite generation of solid waste would be approximately 5.0 tons per day by 2013. Solid waste disposal requirements would increase over the projected ROI generation rates as a result of the Proposed Action, requiring the transport of this waste via transfer stations to out-of-parish landfills, if a new landfill is not sited in the parish.

The increase in solid waste generated with the Proposed Action would be less because the resulting employment would be less than preclosure employment levels. Based on per capita solid waste generation rates and future population growth, additional landfill capacity would not be required either in Rapides Parish or elsewhere in the state if the wastes are shipped via transfer stations. Depending on its effectiveness, the recycling program currently being implemented by the City of Alexandria could extend the cumulative landfill capacity rates. By 1998, solid waste generation would increase by an average of 0.32 ton per day in Alexandria, 0.09 ton per day in Pineville, and 1.8 tons per day on the base. By 2013, the average increase would be 2.5 tons per day in Alexandria, 0.71 ton per day in Pineville, and 5.0 tons per day on the base.

Energy.

Electricity. The projected onsite electricity requirement for the Proposed Action would be approximately 0.05 million kilowatt-hours (kWh) per day by 2013. Electricity consumption over projected ROI demand within Alexandria and Pineville would increase as a result of the Proposed Action. By 1998, the electricity demand would increase by an average of 0.05 million kWh per day in Alexandria, 0.01 million kWh per day in Pineville, and 0.02 million kWh per day on the base. By 2013, the increase in electricity demand from the Proposed Action would average 0.40 million kWh per day in Alexandria, 0.11 million kWh per day in Pineville, and 0.05 million kWh per day on the base. Additional electricity would not be needed because the employment generated by the Proposed Action would be less than the preclosure onbase employment.

Natural Gas. Onsite demand for natural gas would be approximately 0.13 million cubic feet (MMcf) per day by 2013. The Proposed Action would increase natural gas consumption rates within Alexandria and Pineville beyond closure baseline consumption. By 1998, natural gas demand would increase by an average of 0.014 MMcf per day in Alexandria, 0.004 MMcf per day in Pineville, and 0.05 MMcf per day on the base. By 2013, the increase resulting from the Proposed Action would average 0.1 MMcf per day in Alexandria, 0.03 MMcf per day in Pineville, and 0.13 MMcf per day on the base. No additional natural gas supply would be needed because the employment generated by the Proposed Action would be less than the preclosure onbase employment.

Mitigation Measures. No mitigation measures would be required for the Proposed Action.

4.2.4.2 General Aviation Alternative

Water. Onsite water demand with the General Aviation Alternative would be about 0.18 MGD by 2013. This alternative would also increase water consumption in Alexandria and Pineville over the projected ROI demand. By 1998, the increase in water demand would average 0.02 MGD in Alexandria, 0.007 MGD in Pineville, and 0.07 MGD on the base. By 2013, the increase associated with this alternative would average 0.07 MGD in Alexandria, 0.02 MGD in Pineville, and 0.18 MGD on the base.

Infrastructure changes would not be required because the employment generated by this alternative would be less than the preclosure onbase employment, and the Alexandria/Pineville area would not experience any substantial population changes with this alternative.

Wastewater. This alternative would generate about 0.12 MGD of wastewater on the site by 2013. In addition, the General Aviation Alternative would increase wastewater treatment levels beyond the projected ROI generation rates. By 1998, the increase in wastewater treatment demand would average 0.02 MGD in Alexandria, 0.005 MGD in Pineville, and 0.05 MGD on the base. By 2013, the increase associated with this alternative would average 0.05 MGD in Alexandria, 0.01 MGD in Pineville, and 0.12 MGD on the base.

No infrastructure changes would be required with this alternative because employment would be less than the preclosure onbase employment, and the Alexandria and Pineville area would not experience any substantial population changes. As described for the Proposed Action, specific reuses may require industrial pretreatment permits from the City of Alexandria.

Solid Waste. With this alternative, solid waste generated on the site would be about 3.9 tons per day. The out-of-parish landfills that accept waste from Alexandria and Pineville would experience an increase in disposal over the projected ROI conditions. By 1998, the increase in solid waste generation would average 0.25 ton per day in Alexandria, 0.07 ton per day in Pineville, and 1.45 tons per day on the base. By 2013, the increase would average 0.7 ton per day in Alexandria, 0.2 ton per day in Pineville, and 3.9 tons per day on the base.

The increase in solid waste generated with this alternative would not require additional landfill capacity because the resulting employment would be less than the preclosure onbase employment, and the Alexandria and Pineville area would not experience any substantial population changes. Depending on its effectiveness, the City of Alexandria recycling program could extend cumulative landfill capacity rates.

Energy.

Electricity. Onsite electricity demand would be 0.04 million kWh per day by 2013 with this alternative. In addition, electricity consumption in Alexandria and Pineville would increase over the projected ROI demand. By 1998, the increase in electricity demand would average 0.04 million kWh per day in Alexandria, 0.01 million kWh per day in Pineville, and 0.02 million kWh per day on the base. By 2013, the average increase would be 0.11 million kWh per day in Alexandria, 0.03 million kWh per day in Pineville, and 0.04 million kWh per day on the base. No additional electricity production would be required because the employment generated would be less than the preclosure onbase employment.

Natural Gas. Onsite demand for natural gas associated with the General Aviation Alternative would be about 0.10 MMcf per day by 2013. This alternative would also increase the natural gas consumption in Alexandria and Pineville over the projected ROI demand. By 1998, the increase in natural gas demand would average 0.01 MMcf per day in Alexandria, 0.003 MMcf per day in Pineville, and 0.037 MMcf per day on the base. By 2013, the increase from this alternative would average 0.03 MMcf per day in Alexandria, 0.008 MMcf per day in Pineville, and 0.1 MMcf per day on the base. Additional natural gas production would not be needed with this alternative because the resulting employment would be less than the preclosure onbase employment, and the Alexandria and Pineville area would not experience any substantial population changes.

Mitigation Measures. No mitigation measures would be required for this alternative.

4.2.4.3 Business/Technology Center Alternative

Water. With this alternative, onsite water demand would be 0.20 MGD by 2013. Water consumption would increase over the projected ROI demand. By 1998, the increase in water demand would average 0.03 MGD in Alexandria, 0.008 MGD in Pineville, and 0.08 MGD on the base. By 2013, this increase would average 0.10 MGD in Alexandria, 0.03 MGD in Pineville, and 0.20 MGD on the base.

No infrastructure changes would be required with this alternative because the resulting employment would be less than the preclosure employment levels on the base, and Alexandria and Pineville would not experience any substantial population changes.

Wastewater. This alternative would generate about 0.13 MGD of wastewater on the site by 2013. In addition, this alternative would increase projected ROI generation rates. The increase in wastewater treatment demand would average 0.02 MGD in Alexandria, 0.006 MGD in Pineville, and 0.06 MGD on the base by 1998. By 2013, the increase would average approximately 0.07 MGD in Alexandria, 0.02 MGD in Pineville, and 0.13 MGD on the base.

No infrastructure changes would be required with this alternative because the resulting employment would be less than the preclosure employment on the base, and the ROI would not experience any substantial population changes as a result of this alternative. Specific reuses may require that industrial pretreatment permits be obtained from the City of Alexandria.

Solid Waste. With this alternative, solid waste generated on the site would be approximately 4.3 tons per day. In addition, the out-of-parish landfills that accept solid waste from Alexandria and Pineville would experience an increase in disposal levels over the projected ROI generation rates. By 1998, the increase in solid waste generation would average 0.3 ton per day in Alexandria, 0.1 ton per day in Pineville, and 1.9 tons per day on the base. By 2013, the increase in solid waste generated with this alternative would average 1.0 ton per day in Alexandria, 0.3 ton per day in Pineville, and 4.3 tons per day on the base.

The increase in solid waste generated with this alternative would not require additional landfill capacity because the resulting employment would be less than the preclosure onbase employment, and the ROI would not experience any substantial population changes. Depending on its effectiveness, the City of Alexandria recycling program could extend the cumulative landfill capacitv rates.

Energy.

Electricity. With this alternative, onsite electricity consumption would be 0.05 million kWh by 2013. This alternative would also increase the electricity consumption in Alexandria and Pineville over the projected ROI demand. By 1998, the increase in electricity demand would average approximately 0.05 million kWh per day in Alexandria, 0.01 million kWh per day in Pineville, and 0.02 million kWh per day on the base. The daily demand would increase by an average of 0.16 million kWh per day in Alexandria, 0.05 million kWh per day in Pineville, and 0.05 million kWh per day on the base by 2013.

Additional electricity production would not be required with this alternative because the resulting employment would be less than the preclosure onbase employment, and the ROI would not experience any substantial population changes.

Natural Gas. With this alternative, onsite demand for natural gas would be 0.11 MMcf per day by 2013. This alternative would increase natural gas consumption in Alexandria and Pineville over the projected ROI demand. The increase in natural gas consumption would average approximately 0.01 MMcf per day in Alexandria, 0.003 MMcf per day in Pineville, and 0.05 MMcf per day on the base by 1998. This alternative would cause an average increase of 0.04 MMcf per day in Alexandria, 0.01 MMcf per day in Pineville, and 0.11 MMcf per day on the base by 2013.

Natural gas production would not need to increase with this alternative because the resulting employment would be less than the preclosure onbase employment, and the ROI would not experience any substantial changes in population.

Mitigation Measures. No mitioation measures would be required with this alternative.

4.2.4.4 Recreation/Tourism Alternative

Water. Onsite demand for water with this alternative would be 0.18 MGD by 2013. This alternative would also increase water consumption in Alexandria and Pineville over the projected ROI demand. By 1998, the increase in water demand would average 0.03 MGD in Alexandria, 0.007 MGD in Pineville, and 0.06 MGD on the base. By 2013, the increase from this alternative would average 0.07 MGD in Alexandria, 0.02 MGD in Pineville, and 0.18 MGD on the base.

No infrastructure changes would be required with this alternative because the resulting employment would be less than the preclosure onbase employment, and the ROI would not experience any substantial population changes.

Wastewater. This alternative would generate approximately 0.12 MGD of wastewater on the site by 2013. This alternative would also increase wastewater treatment requirements over the projected ROI generation rates. By 1998, the increase in wastewater generated would average 0.02 MGD in Alexandria, 0.005 MGD in Pineville, and 0.04 MGD on the base. By 2013, the increase from this alternative would be approximately 0.05 MGD in Alexandria, 0.01 MGD in Pineville, and 0.12 MGD on the base.

No infrastructure changes would be required with this alternative because the resulting employment would be less than the preclosure onbase employment, and the ROI would not experience any substantial population changes. Specific reuses require that an industrial pretreatment permit be obtained from the City of Alexandria.

Solid Waste. With this alternative, solid waste generated on the site would be approximately 3.9 tons per day in 2013. Additionally, the out-of-parish landfills that accept solid waste from Alexandria and Pineville would experience an increase in disposal levels over the projected ROI generation rates. By 1998, the increase in solid waste would average approximately 0.25 ton per day in Alexandria, 0.07 ton per day in Pineville, and 1.4 tons per day on the base. By 2013, the solid waste generated by this alternative would increase an average of 0.74 ton per day in Alexandria, 0.21 ton per day in Pineville, and 3.9 tons per day on the base.

The increase in solid waste generated with this alternative would not require additional landfill capacity because the resulting employment would be less than the preclosure employment on the base, and the ROI would not experience any substantial population changes. Depending on its effectiveness, the City of Alexandria recycling program could extend the cumulative landfill capacity rates.

Energy.

Electricity. With this alternative, onsite electricity demand would be 0.04 million kWh per day by 2013. This alternative would also increase electricity consumption over the projected ROI demand. By 1998, the increase in electricity demand would average approximately 0.04 million kWh per day in Alexandria, 0.01 million kWh per day in Pineville, and 0.01 million kWh per day on the base. By 2013, the increase from this alternative would average 0.12 million kWh per day in Alexandria, 0.03 million kWh per day in Pineville, and 0.04 million kWh per day on the base.

Additional electricity production would not be required with this alternative because the resulting employment would be less than the preclosure employment on the base and the ROI would not experience any substantial change in population.

Natural Gas. Onsite natural gas demand would increase to 0.10 MMcf per day by 2013 with this alternative. In addition, an increase in natural gas consumption over the projected ROI demand would occur. By 1998, the increased demand for natural gas would average approximately 0.01 MMcf per day in Alexandria, 0.003 MMcf per day in Pineville, and 0.04 MMcf per day on the base. By 2013, the increase in demand associated with this alternative would average approximately 0.03 MMcf per day in Alexandria, 0.009 MMcf per day in Pineville, and 0.10 MMcf per day on the base.

Additional natural gas production would not be required with this alternative because the resulting employment would be less than preclosure onbase employment, and the ROI would not experience any substantial change in population.

Mitigation Measures. No mitigation measures would be required with this alternative.

4.2.4.5 No-Action Alternative

With the No-Action Alternative, the U.S. Government would retain ownership of England AFB property. An OL (approximately 50 personnel including contractors) would maintain the facilities and grounds. Utility use on the site would be minimal compared to the Proposed Action and alternatives. However, minimal use of the utility systems could result in their degradation over the long term.

In the absence of any reuse actions at England AFB, postclosure utility demand in the study area is projected to increase with the increase in population. The following utility use was forecast based on per capita demand factors for the study area:

- Water consumption in Alexandria and Pineville is projected to increase from 20.6 MGD in 1993 to 21.1 MGD by 2013;

- Wastewater treatment volume in the Alexandria and Pineville service areas is projected to increase from 8.9 MGD in 1993 to 9.25 MGD by 2013;

- Solid waste generated in Alexandria and Pineville is projected to increase from approximately 140.4 tons per day by 1993 to 144.4 tons per day by 2013;

- Electricity consumption in Alexandria and the Central Louisiana Electric Company service area is projected to increase from 17.9 million kWh per day in 1993 to 18.3 million kWh per day by 2013; and

- Natural gas consumption in Alexandria and Pineville is projected to increase from 6.7 MMcf per day in 1993 to 6.9 MMcf per day by 2013.

Mitigation Measures. No mitigation measures would be required with the No-Action Alternative.

4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

This section addresses the potential impacts of existing contaminated sites on the various reuse options, and the potential for environmental impacts caused by hazardous materials and waste management practices associated with the reuse options. Hazardous materials and wastes, IRP sites, storage tanks, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, and medical/biohazardous wastes are discussed in this section.

The U.S. Air Force is committed to the remediation of all contamination at England AFB resulting from past Air Force activities. The OL will remain after base closure to coordinate remediation activities. Delays or restrictions in disposal or reuse of property may occur due to the extent of contamination and the results of both the risk assessment and remedial designs determined for contaminated sites. Examples of conditions resulting in possible land use restrictions would be the capping of landfills, constraints from methane generation and cap integrity, and long-term monitoring wells. These conditions would have to be considered in the layout of future development. Options to recipients for these areas could include creation of parks, greenbelts, or open spaces.

Regulatory standards and guidelines have been applied to determine the impacts caused by hazardous materials and waste. The following criteria were used to identify potential impacts:

- Accidental release of friable asbestos during the demolition or modification of a structure;

- Generation of 100 kilograms (or more) of hazardous waste resulting in increased regulatory requirements;
- New operational requirements or service for all underground storage tanks (UST) and tank systems;
- Any spill or release of a reportable quantity of a hazardous material;
- Manufacturing of any compound that requires notifying the pertinent regulatory agency; and
- Exposure of the public or the environment tc any hazardous material through release or disposal practices.

4.3.1 Proposed Action

4.3.1.1 Hazardous Materials Management

The hazardous materials likely to be used for activities in the proposed land use areas are identified in Table 4.3-1. The types of hazardous materials used would be similar to those used by the base prior to closure. The quantity of hazardous materials used with the Proposed Action would increase over the baseline conditions at closure. The specific chemical compositions and exact use rates are not known.

Currently, handling of hazardous materials on the base is managed by the Air Force. If the Proposed Action were implemented, each separate organization within the industrial airpark structure would be responsible for the management of hazardous materials according to applicable regulations. Additionally, each organization would have to comply with the Superfund Amendments and Reauthorization Act (SARA), Section 311, Title III, which requires that local communities be informed of the use of hazardous materials.

4.3.1.2 Hazardous Waste Management

The proposed land use areas (Table 4.3-1) would be used for many operations that are yet to be defined; therefore, this section describes the potential types of hazardous waste that may be generated in these land use areas.

Once the responsibilities of hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans are required by Occupational Safety and Health Administration (OSHA) regulations (29 CFR). Mutual aid agreements with surrounding communities (Alexandria and Pineville) may require additional scrutiny and training of emergency staff.

The Small Arms Firing Range will be cleared of live ordnance and debris by the U.S. Air Force prior to disposal of this property. It will also undergo an RCRA Facility Investigation (RFI) and Corrective Measures Investigation (CMI) during

FY 1993. Disposal and reuse may be delayed or limited based on the results of the RFI, CMI, or subsequent remediation.

Table 4.3-1

Hazardous Material Usage - Proposed Action

Land Use	Operation Process	Hazardous Materials
Airfield	Aircraft refueling; anti-/de-icing; utilization of clear zones, runways, taxiways, airport terminal parking, administrative offices, corporate and private aviation facilities, and aircraft parking	Aviation fuels, propylene glycol, ethylene glycol, and heating oils
Aviation Support	Operations associated with aircraft maintenance and manufacturing, aeronautics research and development, air transportation-related industry and warehousing, law enforcement, and other governmental administrative services	Fuels; solvents; paints; petroleum, oil, and lubricants (POL); hydraulic fluids; degreasers; corrosives; heavy metals; reactives; thinners; paints; glycols; ignitables; heating oils; plating waste; cyanides; and laboratory waste
Industrial	Activities associated with light industry, research and development, warehousing, and manufacturing	Solvent, heavy metals, POL, corrosives, catalysts, aerosols, fuels, heating oils, ignitables, and pesticides
Institutional (Medical)	Hospital/clinic, rehabilitation facilities, X-ray unit	Pharmaceuticals, medical/ biohazardous waste, chemotherapeutic drugs, radiological sources, heavy metals
Commercial	Activities associated with offices, light industry, research and development, higher value warehousing, retail, service industries, and restaurants	Fuels, solvents, corrosives, POL, ignitables, heating oils, pesticides, and dry cleaning wastes
Residential	Maintenance of single-family and multi-family units, swimming pools, and landscaping	Pesticides, fertilizers, fuels, waste oils, chlorine, and household wastes
Public/Recreational	Maintenance of existing recreational facilities, including the golf course, ball fields, swimming pools, and other recreational facilities	Pesticides, fertilizers, chlorine, heating oils, paints, thinners, cleaners, solvents, aerosols, and POL
Vacant Land	Vacant	Pesticides

The presence of numerous independent owners/operators on the base would change the regulatory requirements and probably increase the regulatory burden relative to hazardous waste management. Activities associated with the Proposed Action would lead to an increase in the amount of hazardous waste generated compared to the closure baseline.

4.3.1.3 Installation Restoration Program Sites

The U.S. Air Force is committed to continue IRP activities under the Defense Environmental Restoration Program (DERP) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). IRP activities would be coordinated by the OL, the EPA, and Louisiana Department of Environmental Quality.

The type of development that is appropriate for property adjacent to or over an IRP site may be limited by the risk to human health and the environment posed by contaminants at the site. For example, residential development over an IRP landfill is generally not appropriate. The risk posed by IRP sites is measured by a risk assessment that analyzes the types of substances present at a site and the potential means by which the public and the environment may be exposed to them. The Remedial Design, or blueprint for remediating the IRP site, is based on the results of the risk assessment and the geographical extent of the contamination.

Disposal and reuse of some England AFB properties may be delayed or limited by the extent and type of contamination at IRP sites (Chapter 3.0, Figure 3.3-2) and by current and future IRP remediation activities. Based on the results of IRP investigations, the Air Force may, when appropriate, place limits on land reuse through deed restrictions on conveyances and use restrictions on leases. The Air Force may also retain right-of-access to other properties to inspect monitoring wells or conduct other remedial activities.

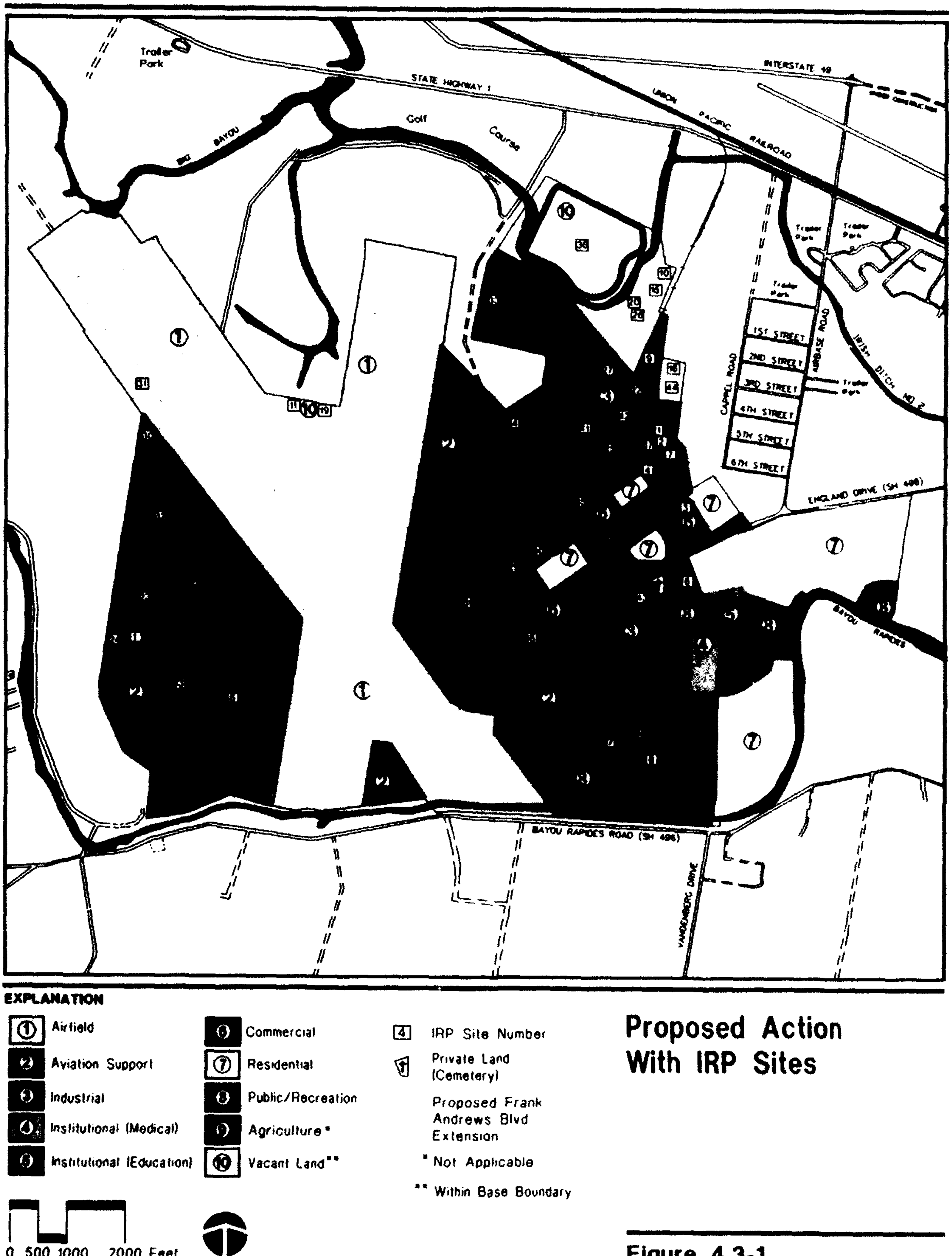
The IRP sites within each land use area for the Proposed Action are discussed below and summarized in Table 4.3-2. Figure 4.3-1 shows the location of the IRP sites for each land use area.

Table 4.3-2

Installation Restoration Program Sites Within Land Use Areas - Proposed Action

Proposed Land Use	IRP Sites
Airfield	Construction Rubble Disposal Site (LF-31).
Aviation Support	Fire Protection Training Areas No. 1, No. 3, and No. 2 (FT-1, FT-5, and FT-13), CE Tank Spill (ST-17), Fire Training Drum Storage Areas No. 1, and No. 2 (SS-23 and SS-24), Horse Stable Disposal Sites (LF-28), Construction Rubble Disposal Sites (LF-29, LF-30, and LF-32), PD-680 Spill (SS-39), and Pesticide Storage Building 1210 (SS-40)
Industrial	POL Sludge Weathering Pit (WP-2), JP-4 Underground Line Leak (ST-4), JP-4 Tank No. 1319 (ST-7), General Refuse Disposal Site (LF-9), Fire Protection Training Area No. 4 (FT-14), Bulk Fuel Storage Area No. 1 (SS-21), Scrap Metal Disposal Site (OT-22), World War II Bomb Disposal Site (OT-25), Construction Rubble Disposal Site (LF-27), Ammo Area Disposal Site (LF-33), Tank Truck Leak (ST-37), Pesticide Storage Building 1703 (SS-41), and CE Supply Hazard Storage Yard (SS-42)
Medical	PCB Transformer Spill (SS-38)
Commercial	JP-4 Underground Line Leak (ST-3), Mogas Underground Tank Leak (ST-18), and Incinerator (OT-35)
Public/Recreational	JP-4 Underground Line Leak (ST-6), Waste Oil Storage Tank (ST-8), DRMO Storage Yard (SS-43)
Vacant Land	Chlorine Gas Cylinder Disposal Site (LF-10), Hazardous Chemical Burial Mound (LF-11), General Refuse Disposal Sites (LF-15 and LF-16), Low-Level Radioactive Waste Disposal Sites (RW-19 and RW-20), Construction Rubble Disposal Site (LF-26), Sewage Lagoon (WP-36), and Munitions Burial Site (OT-44)

Airfield. A construction rubble disposal site (LF-31) is the only IRP site located in the proposed airfield area. The extent of contamination at this site will be determined by the Air Force. Remedial activities associated with this site could



Proposed Action With IRP Sites

Figure 4.3-1

cause delays in property disposal. If remedial activities are confined to the areas outside the object-free zone, they should be manageable without inhibiting airfield use. Installation and use of long-term monitoring devices should not affect airfield operations.

Aviation Support. Twelve IRP sites are located in the proposed aviation support areas. These include three fire protection training areas (Sites FT-1, FT-5, and FT-13), two fire training drum storage areas (Sites SS-23 and SS-24), the horse stable disposal site (LF-28), three construction rubble disposal sites (Sites LF-29, LF-30, and LF-32), the CE tank spill site (Site ST-17), the PD-680 spill site (Site SS-39), and pesticide storage Building 1210 (Site SS-40). The extent of contamination for these sites will be determined by the Air Force. Remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Industrial. Thirteen IRP sites are located in the proposed industrial areas. These include the POL sludge weathering pit (Site WP-2), a JP-4 underground line leak site (Site ST-4), the JP-4 Tank No. 1319 site (Site ST-7), a general refuse disposal site (Site LF-9), Fire Protection Training Area No. 4 (Site FT-14), Bulk Fuel Storage Area No. 1 (Site SS-21), a scrap metal disposal site (Site OT-22), a World War II bomb disposal site (Site OT-25), a construction rubble disposal site (LF-27), the ammo area disposal site (Site LF-33), a tank truck leak (Site ST-37), pesticide storage Building 1703 (Site SS-41), and the CE supply hazard storage yard (Site SS-42). The extent of contamination for these sites will be determined by the Air Force. Remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Institutional (Medical). A PCB transformer spill site (Site SS-38) is the only IRP site in the proposed medical area. The extent of contamination for this site will be determined by the Air Force. Remedial activities associated with this site could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Commercial. Three IRP sites are located in the proposed commercial areas. These include a JP-4 underground line leak site (Site ST-3), a Mogas underground tank leak site (Site ST-18), and an incinerator site (Site OT-35). The extent of contamination for these sites will be determined by the Air Force. Remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Public/Recreational. Three IRP sites are located in the proposed public/recreational areas. These include a JP-4 underground line leak site (Site ST-6), the waste oil storage tank site (Site ST-8), and the Defense Reutilization and Marketing Office (DRMO) storage yard (Site SS-43). The extent of contamination for these sites will be determined by the Air Force. Remedial activities associated with these sites could cause delays in property disposal.

Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Vacant Land. Nine IRP sites are located in areas proposed as vacant land for the Proposed Action. These include a chlorine gas cylinder disposal site (LF-10), a hazardous chemical burial mound (Site LF-11), two general refuse disposal sites (Sites LF-15 and LF-16), two low-level radioactive disposal sites (Sites RW-19 and RW-20), a construction rubble disposal site (LF-26), the sewage lagoon (Site WP-36), and a munitions burial site (Site OT-44). The extent of contamination for these sites will be determined by the Air Force. Remedial activities associated with these sites will cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Determination of future base land uses will, to a certain extent, depend on regulatory review of the remedial design of the IRP sites. This review will identify current monitoring well locations and future land use limitations as a result of their presence. The regulatory review process would include notifying the FAA concerning the construction and locations of any monitoring wells.

4.3.1.4 Storage Tanks

Proposed reuses with the Proposed Action, including a regional airport and the JRTC ISB operations, would require aboveground tanks and USTs. Reused and new USTs and aboveground storage tanks that would be required by the new owners/operators must be maintained in compliance with all applicable federal, state, and local regulations. These regulations include acceptable leak detection methods, spill and overfill protection, cathodic protection, secondary containment for the tank systems including the piping, and liability insurance. Existing USTs that would not support reuse activities will be closed in conformance with appropriate federal, state, and local regulations.

Aboveground fuel storage tanks that would not be used to support reuse activities will be purged of fumes to preclude fire hazards. Under the jurisdiction of the Uniform Fire Code, the State Fire Marshal's office can require that:

- Tanks out of service for 90 days be safeguarded; and
- Tanks out of service for 1 year be removed from the property.

The closure of these tanks would be subject to the requirements of the Louisiana Department of Environmental Quality.

4.3.1.5 Asbestos

Renovation and demolition of existing structures with asbestos-containing material (ACM) may occur with reuse development. Such activities would be subject to applicable federal, state, and local regulations. State regulations require that an Asbestos Disposal Verification Form be filed with the Louisiana Department of Environmental Quality prior to removal and disposal of asbestos from any building.

4.3.1.6 Pesticides

Pesticide use associated with the Proposed Action would increase from amounts used under baseline conditions (caretaker status) as a result of the increase in public/recreational and commercial land uses. Management practices would be subject to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and state regulations.

4.3.1.7 Polychlorinated Biphenyls

Since 1986, the base has had no PCB transformers or PCB-contaminated transformers. All PCB transformers and all PCB-contaminated transformers were removed from England AFB and properly disposed of, or in some cases had their dielectric fluid changed and flushed so that the equipment contains less than 50 parts per million (ppm) PCBs (the level considered PCB-contaminated). The PCB-containing capacitors will be removed prior to base disposal.

4.3.1.8 Radon

All radon-screening survey results at England AFB were below the EPA-recommended mitigation level of 4 picoCuries per liter (pCi/l) of air; therefore, no further action is required and radon would not affect reuse activities.

4.3.1.9 Medical/Biohazardous Waste

If the base hospital is reused in a similar capacity, the generation of medical/biohazardous waste and disposal requirements would not appreciably change from preclosure conditions as a result of the change in management of this facility. These materials would not represent impacts from this reuse option.

4.3.1.10 Mitigation Measures

A cooperative body for hazardous materials and waste management could be established with the support of the new individual operators on the base. Establishment of such a body could reduce the costs of environmental compliance training and waste management, increase recycling, minimize waste, and assist in mutual spill responses. The planning body or reuser of the property can obtain information regarding suggested pollution prevention and waste minimization strategies from the EPA's *Guides to Pollution Prevention* series of publications and *Waste Minimization Opportunity Assessment Manual* (Document Number EPA/625/7-88/003).

All IRP sites may not need to be remediated; however, they must be addressed and properly closed out. Active coordination between the Air Force's IRP representative and the England Authority would mitigate potential problems. The presence of IRP sites may limit certain land uses within overlying areas; options could include reuse as open space, greenbelts, or parks.

Use of USTs that would remain in service would have to be coordinated with the England Authority to preclude placing structures that would endanger the integrity of the tanks or piping systems. Aboveground tanks taken out of service would be closed in compliance with state and local regulations.

Coordination of asbestos removal activities in conjunction with construction or renovation activities could mitigate potential asbestos impacts. Compliance with National Emission Standards for Hazardous Air Pollutants would mitigate and preclude asbestos exposures.

4.3.2 General Aviation Alternative

4.3.2.1 Hazardous Materials Management

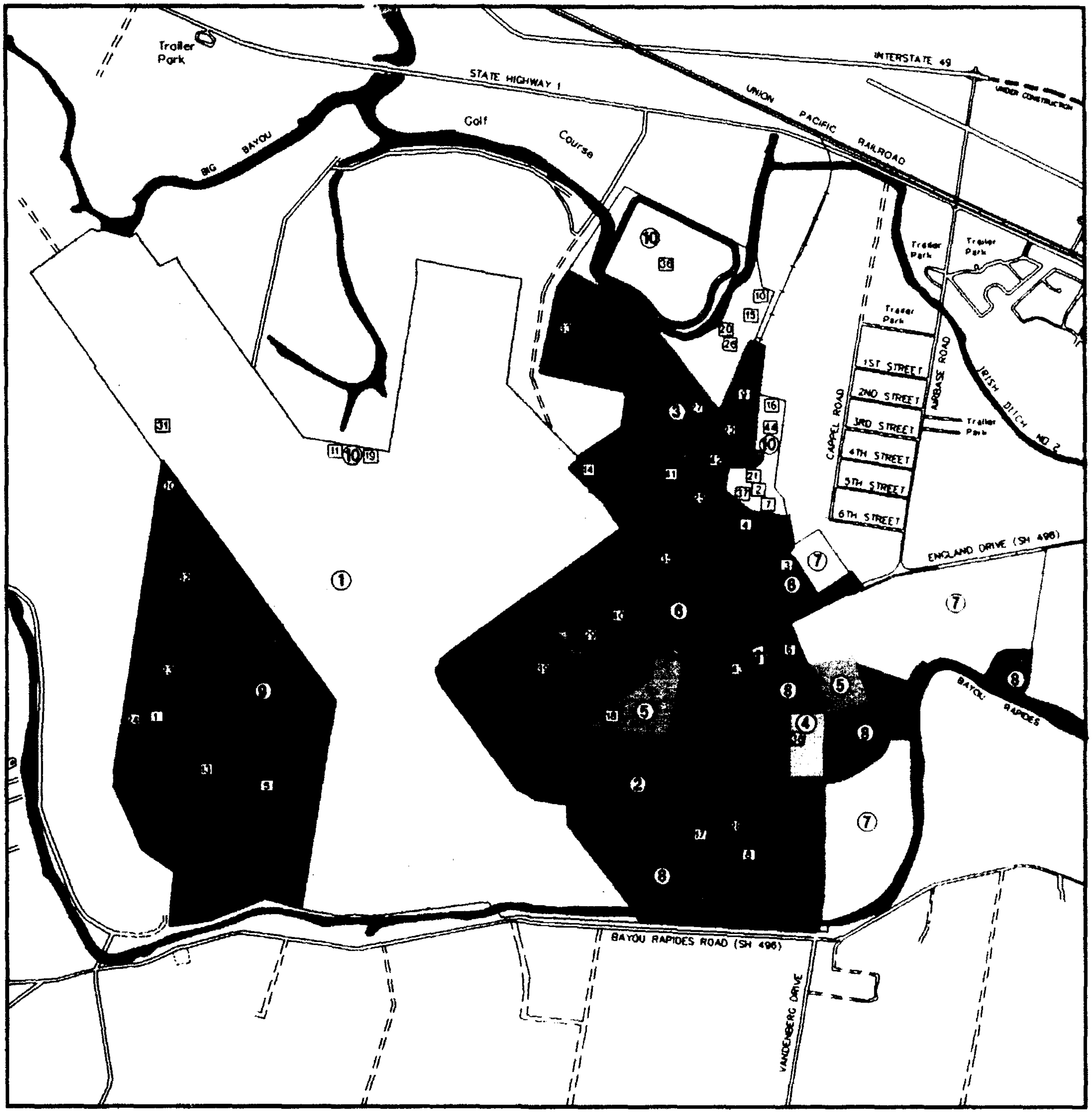
The General Aviation Alternative differs from the Proposed Action in the number and type of airfield operations. The hazardous materials likely to be used for activities in the proposed land use zones for this alternative would be similar to those listed in Table 4.3-1. Smaller quantities of hazardous materials would be used with this alternative because of the reduction of aircraft operations and the limited nature of proposed industrial reuses. The SARA reporting requirements would be the same as described for the Proposed Action.

4.3.2.2 Hazardous Waste Management

The proposed land use areas identified for the General Aviation Alternative (Figure 4.3-2) would be used for many operations that have yet to be defined; therefore, this section describes the potential types of hazardous wastes that may be generated in these land use areas.

Once the responsibilities of hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans are required by OSHA regulations (29 CFR). Mutual aid agreements with Alexandria and Pineville may require additional scrutiny and training of emergency staff.

The presence of numerous independent owners/operators on the base would change the regulatory requirements and probably increase the regulatory burden relative to hazardous waste management. Activities associated with the General Aviation Alternative would probably result in an increase in the amount of hazardous waste generated compared to the closure baseline.



EXPLANATION

1	Airfield	6	Commercial	4	IRP Site Number
2	Aviation Support	7	Residential		Private Land (Cemetery)
3	Industrial	8	Public/Recreation		Proposed Frank Andrews Blvd Extension
4	Institutional (Medical)	9	Agriculture		
5	Institutional (Education)	10	Vacant Land*		* Within Base Boundary

0 500 1000 2000 Feet

General Aviation Alternative With IRP Sites

Figure 4.3-2

4.3.2.3 Installation Restoration Program Sites

IRP remediation requirements may constrain the land uses proposed for this alternative. The location of IRP sites relative to the proposed land use areas for the General Aviation Alternative is shown in Figure 4.3-2 and summarized in Table 4.3-3. IRP remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Table 4.3-3

Installation Restoration Program Sites Within Land Use Areas - General Aviation Alternative

Proposed Land Use	IRP Sites
Airfield	Construction Rubble Disposal Site (LF-31)
Aviation Support	CE Tank Spill (ST-17)
Industrial	General Refuse Disposal Site (LF-9), Fire Protection Training Area No. 4 (FT-14), Scrap Metal Disposal Site (OT-22), World War II Bomb Disposal Site (OT-25), Construction Rubble Disposal Site (LF-27), Ammo Area Disposal Site (LF-33), Pesticide Storage Building 1703 (SS-41), and CE Supply Hazard Storage Yard (SS-42)
Medical	PCB Transformer Spill (SS-38)
Educational	Mogas Underground Tank Leak (ST-18)
Commercial	JP-4 Underground Line Leak (ST-3), JP-4 Underground Line Leak (ST-4), Construction Rubble Disposal Site (LF-29), Incinerator (OT-35), PD-680 Spill (SS-39), and Pesticide Storage Building 1210 (SS-40)
Public/Recreational	JP-4 Underground Line Leak (ST-6), Waste Oil Storage Tank (ST-8), Horse Stable Disposal Site (LF-28), and DRMO Storage Yard (SS-43)
Agricultural	Fire Training Area No. 1 (FT-1), Fire Protection Training Area No. 3 (FT-5), Fire Protection Training Area No. 2 (FT-13), Fire Training Drum Storage Area No. 1 (SS-23), Fire Training Drum Storage Area No. 2 (SS-24), and Construction Rubble Disposal Sites (LF-30 and LF-32)
Vacant Land	POL Sludge Weathering Pit (WP-2), JP-4 Tank No. 1319 (ST-7), Chlorine Gas Cylinder Disposal Site (LF-10), Hazardous Chemical Burial Mound (LF-11), General Refuse Disposal Sites (LF-15 and LF-16), Low-Level Radioactive Waste Disposal Sites (RW-19 and RW-20), Bulk Fuel Storage Area No. 1 (SS-21), Construction Rubble Disposal Site (LF-26), Sewage Lagoon (WP-36), Tank Truck Leak (ST-37), and Munitions Burial Site (OT-44)

4.3.2.4 Storage Tanks

Proposed reuses, particularly airfield and aviation support uses, associated with the General Aviation Alternative would require the use of aboveground storage tanks and USTs. These tanks must be maintained in compliance with federal, state, and local regulations regarding leak detection, spill and overfill protection, secondary containment, and liability insurance.

4.3.2.5 Asbestos

Some renovation and demolition of existing structures with ACM may occur with reuse development associated with the General Aviation Alternative. Such activities must comply with all applicable federal, state, and local regulations. State regulations require that an Asbestos Disposal Verification Form be filed with the Louisiana Department of Environmental Quality prior to removal and disposal of asbestos from any building.

4.3.2.6 Pesticides

Pesticide use associated with the General Aviation Alternative would increase over the amount associated with baseline conditions (caretaker status) as a result of the increased recreational and commercial uses. Use would be required to conform with FIFRA and Louisiana state regulations.

4.3.2.7 Polychlorinated Biphenyls

Since 1986, the base has had no PCB transformers or PCB-contaminated transformers. All PCB transformers and all PCB-contaminated transformers were removed from the base and properly disposed of, or in some cases had their dielectric fluid changed and flushed so that the equipment contained less the 50 ppm PCBs (the level considered PCB-contaminated). The PCB-containing capacitors will be removed prior to base disposal.

4.3.2.8 Radon

All radon-screening survey results at England AFB were below the EPA-recommended mitigation level of 4 pCi/l of air; therefore, no action is required and radon would not affect reuse activities.

4.3.2.9 Medical/Biohazardous Waste

Reuse of the base hospital in a similar capacity for this alternative would generate medical/biohazardous waste, but the amount would not appreciably change from preclosure conditions.

4.3.2.10 Mitigation Measures

The same mitigation measures discussed for the Proposed Action would be appropriate for activities associated with the General Aviation Alternative.

4.3.3 Business/Technology Center Alternative

4.3.3.1 Hazardous Materials Management

Hazardous materials that would likely be used for the Business/Technology Center Alternative would be different from those used for the Proposed Action because there would be no aviation or associated maintenance activities. The amount of hazardous materials used would therefore be less than for the Proposed Action. The hazardous materials that would likely be used with the Business/Technology Center would be similar to those listed in Table 4.3-1, except for the airfield and aviation support categories. The SARA reporting requirements would be the same as described for the Proposed Action.

4.3.3.2 Hazardous Waste Management

The land use areas (Figure 4.3-3) proposed for this alternative would be used for many operations that are yet to be defined. Once the responsibilities for hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans are required by OSHA regulations (29 CFR).

The presence of numerous independent owners/operators on the base would change the regulatory requirements and probably increase the overall regulatory burden relative to hazardous waste management. Overall, activities associated with the Business/Technology Center Alternative would result in an increase in the amount of hazardous waste generated compared to the closure baseline.

4.3.3.3 Installation Restoration Program Sites

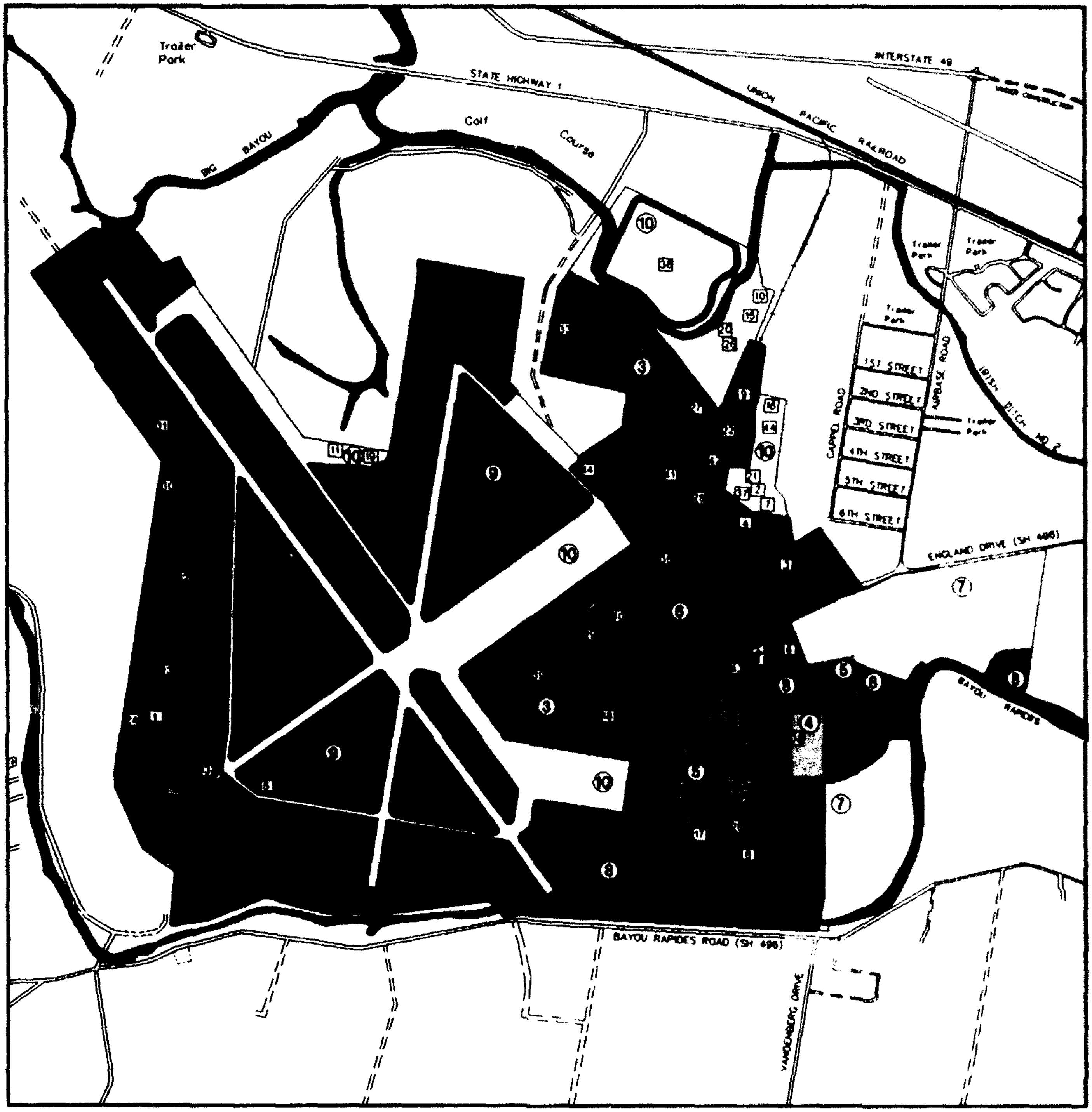
IRP remediation requirements may constrain the land uses proposed for the Business/Technology Center Alternative. The location of IRP sites within each land use area for the Business/Technology Center Alternative is shown in Figure 4.3-3 and summarized in Table 4.3-4. Remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

4.3.3.4 Storage Tanks

Proposed reuses associated with the Business/Technology Center Alternative may require the use of USTs and/or aboveground storage tanks. All USTs required by new owners/operators must be maintained in compliance with federal, state, and local regulations regarding leaks, spill and overfill protection, secondary containment, and liability insurance.

4.3.3.5 Asbestos

Some renovation and demolition of existing structures with ACM would occur with reuse development under the Business/Technology Center Alternative. Effective asbestos management should preclude impacts due to friable asbestos exposure in existing structures and units scheduled for renovation or demolition. Such activities must comply with all applicable federal, state, and local regulations. State regulations require that an Asbestos Disposal Verification Form be filed with the Louisiana Department of Environmental Quality prior to removal and disposal of asbestos from any building.



EXPLANATION

① Airfield*	⑥ Commercial	[4] IRP Site Number
② Aviation Support	⑦ Residential	Private Land (Cemetery)
③ Industrial	⑧ Public/Recreation	Proposed Frank Andrews Blvd Extension
④ Institutional (Medical)	⑨ Agriculture	* Not Applicable
⑤ Institutional (Education)	⑩ Vacant Land**	** Within Base Boundary

0 500 1000 2000 Feet

Business/Technology Center Alternative With IRP Sites

Figure 4.3-3

Table 4.3-4

Installation Restoration Program Sites Within Land Use Areas - Business/Technology Center Alternative

Proposed Land Use	IRP Sites
Industrial	General Refuse Disposal Site (LF-9), Fire Protection Training Area No. 4 (FT-14), Mogas Underground Tank Leak (ST-18), Scrap Metal Disposal Site (OT-22), World War II Bomb Disposal Site (OT-25), Construction Rubble Disposal Site (LF-27), Ammo Area Disposal Site (LF-33), PD-680 Spill (SS-39), Pesticide Storage Building 1703 (SS-41), and CE Supply Hazard Storage Yard (SS-42)
Medical	PCB Transformer Spill (SS-38)
Educational	CE Tank Spill (ST-17)
Commercial	Construction Rubble Disposal Site (LF-29), Incinerator (OT-35), and Pesticide Storage Building 1210 (SS-40)
Public/Recreational	JP-4 Underground Line Leaks (ST-3, ST-4, and ST-6), Waste Oil Storage Tank (ST-8), Horse Stable Disposal Site (LF-28), and DRMO Storage Yard (SS-43)
Agricultural	Fire Training Area No. 1 (FT-1), Fire Protection Training Area No. 3 and No. 2 (FT-5 and FT-13), Fire Training Drum Storage Area No. 1 and No. 2 (SS-23 and SS-24), and Construction Rubble Disposal Sites (LF-30, LF-31, and LF-32)
Vacant Land	POL Sludge Weathering Pit (WP-2), JP-4 Tank No. 1319 (ST-7), Chlorine Gas Cylinder Disposal Site (LF-10), Hazardous Chemical Burial Mound (LF-11), General Refuse Disposal Sites (LF-15 and LF-16), Low-Level Radioactive Waste Disposal Sites (RW-19 and RW-20), Bulk Fuel Storage Area No. 1 (SS-21), Construction Rubble Disposal Site (LF-26), Sewage Lagoon (WP-36), Tank Truck Leak (ST-37), and Munitions and Burial Site (OT-44)

4.3.3.6 Pesticides

Pesticide use associated with the Business/Technology Center Alternative would increase from the amount used under baseline conditions (caretaker status) as a result of the increased recreational and agricultural land uses. Pesticide management would be required to conform with FIFRA and Louisiana state regulations.

4.3.3.7 Polychlorinated Biphenyls

Since 1986, the base has had no PCB transformers or PCB-contaminated transformers. All PCB transformers and all PCB-contaminated transformers were removed from the base and properly disposed of, or in some cases had their dielectric fluid changed and flushed so that the equipment contained less than 50 ppm PCBs (the level considered PCB-contaminated). The PCB-containing capacitors will be removed prior to base disposal.

4.3.3.8 Radon

All radon-screening survey results were below the EPA's mitigation level of 4 pCi/l of air; therefore, no action is required and radon would not affect reuse activities.

4.3.3.9 Medical/Biohazardous Waste

Reuse of the base hospital in a similar capacity for this alternative would generate medical/biohazardous waste, but the amount would not appreciably change from preclosure conditions.

4.3.3.10 Mitigation Measures

The same mitigation measures discussed for the Proposed Action would be appropriate for activities associated with the Business/Technology Center Alternative.

4.3.4 Recreation/Tourism Alternative

4.3.4.1 Hazardous Materials Management

Hazardous materials that would likely be used with the Recreation/Tourism Alternative would be different from those used for the Proposed Action because there would be no aviation or associated maintenance activities. The amount of hazardous materials used would therefore be less than with the Proposed Action. Hazardous materials that would likely be used with the Recreation/Tourism Alternative would be similar to those listed in Table 4.3-1, except for the airfield and aviation support categories. The SARA reporting requirements would be the same as described for the Proposed Action.

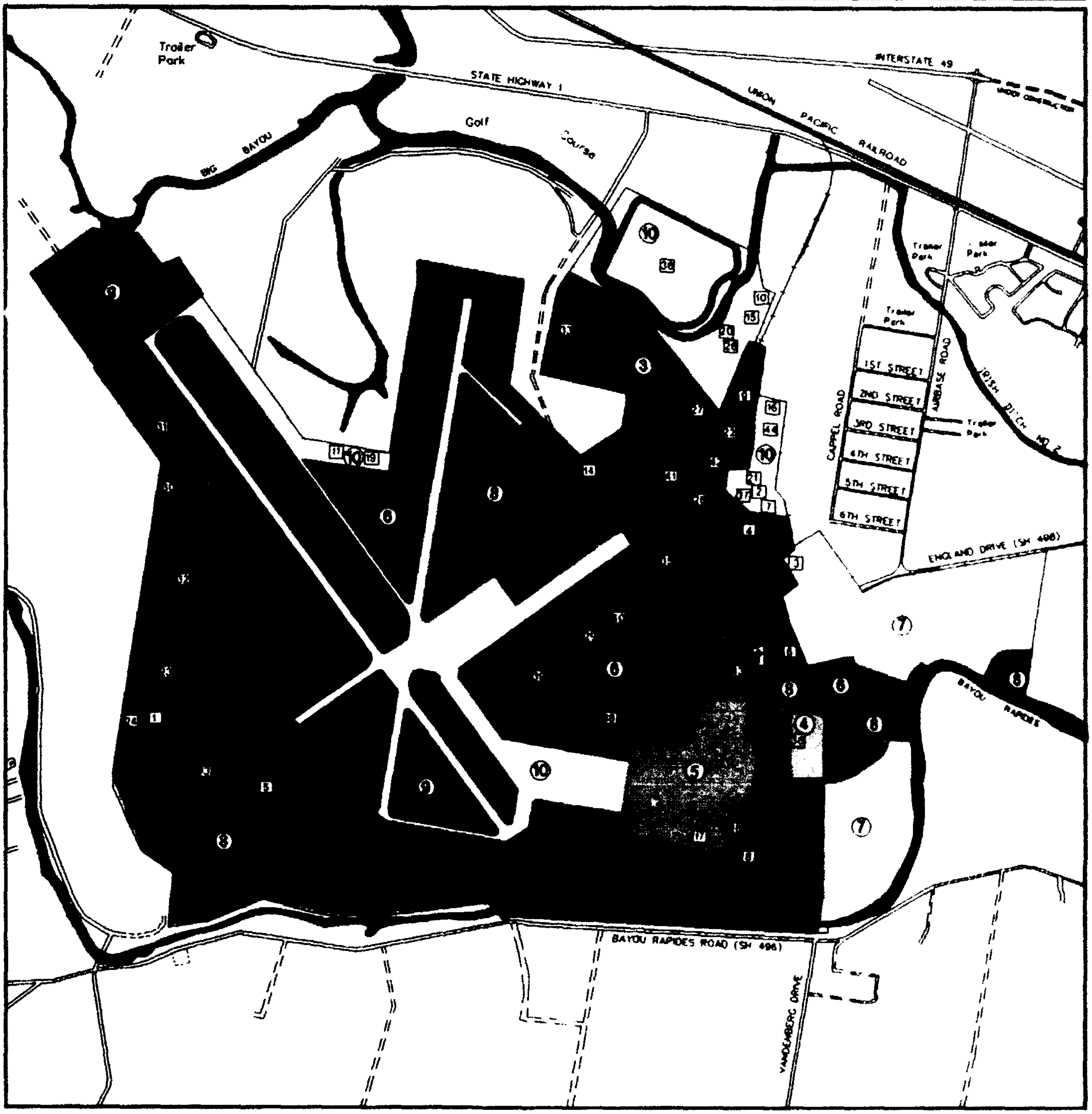
4.3.4.2 Hazardous Waste Management

The land use areas proposed for this alternative (Figure 4.3-4) would be used for many operations that are yet to be defined. Once the responsibilities for hazardous waste management are allocated to individual organizations, proficiency with those materials and spill response plans are required by OSHA regulations (29 CFR).

The presence of numerous independent owners/operators on the base would change the regulatory requirements and probably increase the overall regulatory burden relative to hazardous waste management. Overall, activities associated with the Recreation/Tourism Alternative would result in an increase in the amount of hazardous waste generated compared to the closure baseline.

4.3.4.3 Installation Restoration Program Sites

IRP remediation requirements may constrain the land uses proposed for the Recreation/Tourism Alternative. The location of the IRP sites relative to the



EXPLANATION

① Airfield*	⑥ Commercial	IRP Site Number
② Aviation Support	⑦ Residential	Private Land (Cemetery)
③ Industrial	⑧ Public/Recreation	Proposed Frank Andrews Blvd Extension
④ Institutional (Medical)	⑨ Agriculture	*Not Applicable
⑤ Institutional (Education)	⑩ Vacant Land**	**Within Base Boundary

0 500 1000 2000 Feet

Recreation/Tourism Alternative With IRP Sites

Figure 4.3-4

proposed land uses is shown in Figure 4.3-4 and summarized in Table 4.3-5. Remedial activities associated with these sites could cause delays in property disposal. Installation and use of long-term monitoring devices may delay or restrict reuse in some areas.

Table 4.3-5

Installation Restoration Program Sites Within Land Use Areas - Recreation/Tourism Alternative

Proposed Land Use	IRP Sites
Industrial	General Refuse Disposal Site (LF-9), Fire Protection Training Area No. 4 (FT-14), Scrap Metal Disposal Site (OT-22), World War II Bomb Disposal Site (OT-25), Construction Rubble Disposal Site (LF-27), Ammo Area Disposal Site (LF-33), Pesticide Storage Building 1703 (SS-41), and CE Supply Hazard Storage Yard (SS-42)
Medical	PCB Transformer Spill (SS-38)
Educational	CE Tank Spill (ST-17)
Commercial	JP-4 Underground Line Leak (ST-4), Mogas Underground Tank Leak (ST-18), Construction Rubble Disposal Site (LF-29), Incinerator (OT-35), PD-680 Spill (SS-39), and Pesticide Storage Building 1210 (SS-40)
Residential	JP-4 Underground Line Leak (ST-3)
Public/Recreational	Fire Protection Training Areas No. 1, No. 3, and No. 2 (FT-1, FT-5, and FT-13), JP-4 Underground Line Leak (ST-6), Waste Oil Storage Tank (ST-8), Fire Training Drum Storage Areas No. 1 and No. 2 (SS-23 and SS-24), Horse Stable Disposal Site (LF-28), Construction Rubble Disposal Site (LF-32), and DRMO Storage Yard (SS-43)
Agricultural	Construction Rubble Disposal Sites (LF-30 and LF-31)
Vacant Land	POL Sludge Weathering Pit (WP-2), JP-4 Tank No. 1319 (ST-7), Chlorine Gas Cylinder Disposal Site (LF-10), Hazardous Chemical Burial Mound (LF-11), General Refuse Disposal Sites (LF-15 and LF-16), Low-Level Radioactive Waste Disposal Sites (RW-19 and RW-20), Bulk Fuel Storage Area No. 1 (SS-21), Construction Rubble Disposal Site (LF-26), Sewage Lagoon (WP-36), Tank Truck Leak (ST-37), and Munitions Burial Site (OT-44)

4.3.4.4 Storage Tanks

Proposed reuses associated with the Recreation/Tourism Alternative may require the use of aboveground storage tanks and/or USTs. All USTs required by new owners/operators must be maintained in compliance with federal, state, and local regulations regarding leak detection, spill and overfill protection, secondary containment, and liability insurance.

4.3.4.5 Asbestos

Some renovation and demolition of existing structures with ACM may occur with reuse development under the Recreation/Tourism Alternative. Such activities will need to comply with all applicable federal, state, and local regulations.

4.3.4.6 Pesticides

Pesticide use associated with the Recreation/Tourism Alternative would increase from the amount used with baseline conditions (caretaker status) as a result of the increased recreational, agricultural, and commercial land uses. Use would be required to conform with FIFRA and Louisiana state regulations.

4.3.4.7 Polychlorinated Biphenyls

Since 1986, the base has had no PCB transformers or PCB-contaminated transformers. All PCB transformers and all PCB-contaminated transformers were removed from the base and properly disposed of, or in some cases had their dielectric fluid changed and flushed so that the equipment contained less than 50 ppm PCBs (the level considered PCB-contaminated). The PCB-containing capacitors will be removed prior to base disposal.

4.3.4.8 Radon

All radon-screening survey results were below the EPA's mitigation level of 4 pCi/l of air; therefore, no action is required and radon would not affect reuse activities.

4.3.4.9 Medical/Biohazardous Waste

Reuse of the base hospital in a similar capacity for this alternative would generate medical/biohazardous waste, but the amount would not appreciably change from preclosure conditions.

4.3.4.10 Mitigation Measures

The same mitigation measures discussed for the Proposed Action would be appropriate for activities associated with the Recreation/Tourism Alternative.

4.3.5 No-Action Alternative

The only hazardous material/waste issues associated with this alternative would concern the final phases of the IRP activities. With the No-Action Alternative, the OL would manage all waste generated under the applicable regulations. Painting and maintenance would be the primary activities that would involve the use of hazardous materials.

4.3.5.1 Hazardous Materials Management

Hazardous materials would be used in preventive and regular maintenance activities and grounds maintenance. The materials used for these activities would include pesticides, fuels, paints, and corrosives. The OL would be responsible for hazardous materials handling training, as well as hazardous materials communication requirements of OSHA regulations.

4.3.5.2 Hazardous Waste Management

Except for facilities utilized by OL personnel, all satellite accumulation points would be closed before base closure. DRMO will arrange for offsite recycling or disposal of all hazardous waste prior to closure. The small amount of hazardous waste that would be generated with the No-Action Alternative may enable the OL to become an exempt, small-quantity generator. The OL will comply with all Resource Conservation and Recovery Act (RCRA) and Louisiana state regulations.

4.3.5.3 Installation Restoration Program Sites

The OL would support the utility requirements for the IRP contractor and provide security for the areas. Ongoing sampling and remedial design activities would be continued by the individual IRP contractors.

4.3.5.4 Storage Tanks

USTs remaining at England AFB would be managed by the OL. Maintenance of cathodic protection and leak detection systems on the USTs would be the responsibility of the OL. Federal and state regulations require the closure of USTs out of service for 1 year.

Large aboveground storage tanks would be purged of fuel fumes to preclude fire hazards prior to closure. The Louisiana Department of Environmental Quality has the discretion to order the removal of aboveground tanks that are out of service. The OL would provide cathodic protection, repair, and general maintenance for the aboveground storage tanks and associated piping.

4.3.5.5 Asbestos

Impacts from the No-Action Alternative would be minimal. Vacated buildings would likely be secured to prevent contact with ACM if the No-Action Alternative were implemented. ACM would continue to be managed in a manner to ensure a safe site condition.

4.3.5.6 Pesticides

With the No-Action Alternative, the grounds and golf course would be maintained in such a manner as to facilitate economic resumption of use. There should not be an appreciable increase in the use of pesticides.

Application of pesticides would be conducted in accordance with FIFRA and state regulations to assure the proper and safe handling and application of all chemicals.

4.3.5.7 Polychlorinated Biphenyls

All PCB transformers (500 ppm or more) and PCB-contaminated transformers (50 to 499 ppm) have been removed from England AFB and properly disposed of, or in some cases had their dielectric fluid changed or flushed so that the equipment contained less than 50 ppm PCBs; therefore, these materials would not cause any impacts. All PCB items (5 to 49 ppm) remaining after base closure would be managed in compliance with applicable regulations (40 CFR 761).

4.3.5.8 Radon

All radon-screening survey results at England AFB were below EPA's recommended mitigation level of 4 pCi/l of air; therefore, no further action is required and radon would not cause any impacts.

4.3.5.9 Medical/Biohazardous Waste

All of these materials would be removed or properly disposed of prior to closure; therefore, these materials would not cause any impacts.

4.3.5.10 Mitigation Measures

With the No-Action Alternative, one organization would be responsible for the basewide management of hazardous materials/waste. Contingency plans to address spill response would be less extensive than those required for the Proposed Action or other reuse alternatives.

4.4 NATURAL ENVIRONMENT

This section describes the potential effects of the Proposed Action and alternatives on the natural resources of soils and geology, water resources, noise, biological resources, and cultural and paleontological resources on and in the vicinity of the base.

4.4.1 Soils and Geology

The potential effects of the Proposed Action and reuse alternatives on local soils and geology have been analyzed based on a review of published literature.

4.4.1.1 Proposed Action

Effects of the Proposed Action on regional soils and geology would not be significant. Effects on local soils and geology would result primarily from construction in the industrial area in the northeastern portion of the base, expansion of the nine-hole golf course near the southern boundary, and minor surface disturbance associated with the JRTC ISB (i.e., construction of a tent encampment and training area), including grading, excavating, and recontouring the soils. These activities would minimally alter the soil profiles and have little effect on local topography. Approximately 160 acres would be disturbed with the Proposed Action (Chapter 2.0, Table 2.2-3). Construction of a new passenger terminal complex would likely occur on previously disturbed areas.

Use of sand and gravel resources (i.e., for construction material and concrete) for new buildings and roadways is not expected to reduce availability of these materials from local suppliers.

Moreland Series soils have a moderate to very high shrink-swell potential and low strength, are clayey and wet, and therefore have severe limitations for construction. No construction is planned on these soils as part of the Proposed Action.

The Moreland and Norwood Series soils both have slight erosion potential; therefore, no significant impacts are expected to result from construction activities associated with the Proposed Action. Periodic surficial disturbance of the Norwood Series soil in the JRTC area as a result of training exercises could cause temporary minor erosion; however, this is not expected to occur often and would not be considered a significant impact.

Most of the base has a substrate of Norwood Series soils. These soils have a low shrink-swell potential and are not expected to cause problems in construction. The proposed industrial area construction would occur on Norwood Series soils. Because of their low strength, Norwood Series soils have a moderate limitation for construction of buildings; therefore, buildings should be designed accordingly.

The land surface at England AFB is nearly flat; therefore, the Proposed Action would not affect slope stability. In addition, no subsidence problems are expected to occur with the Proposed Action. No seismic hazard impacts are expected with the Proposed Action.

Mitigation Measures. Mitigation measures are available to minimize erosion from wind and water, especially during the construction phase when trenches and cut slopes are exposed. During construction, the length of time vegetation and other cover is absent should be minimized. When cut slopes are exposed, any of the following measures may be useful in limiting erosion:

- Add protective covering with mulch, straw, or other material (tacking will be required);
- Limit the amount of area disturbed and the length of time slopes and barren ground are left exposed;

- Construct diversion dikes and interceptor ditches to divert water away from construction areas; and

- Install slope drains (conduits) and/or water velocity-control devices to reduce concentrated high-velocity streams from developing.

After the construction phase, long-term erosion control can be accomplished by keeping soils under vegetative cover and planting wind breaks. The type of vegetation used as wind breaks must comply with FAA standards in areas intended for aircraft runways. After construction, soils underlying facilities and pavements would not be subject to erosion.

During JRTC ISB training exercises, mitigation measures to reduce surficial disturbance of the Norwood Series soil would include avoiding bare or eroded areas, maintaining ground cover, and avoiding drainage pathways.

The erosion potential of the soils on the base is low. Any losses during the construction phase would be limited in areal extent and occur over short periods of time. Mitigation measures would keep soil losses within the soil loss tolerance levels established by the U.S. Department of Agriculture, Soil Conservation Service (SCS).

4.4.1.2 General Aviation Alternative

Impacts of the General Aviation Alternative on regional soils and geology would not be significant. Effects on local soils and geology would result primarily from construction in the northeastern industrial area and expansion of the golf course, including grading, excavating, and recontouring the soils. These activities would minimally alter the soil profiles and have little effect on local topography. For this alternative, approximately 385 acres would be disturbed (Chapter 2.0, Table 2.3-3). Impacts on soils and geology for this alternative would be similar to those identified for the Proposed Action.

No unique resources would be affected by the General Aviation Alternative. The demand for aggregate would be satisfied upon completion of construction projects related to the General Aviation Alternative, and no further impact would occur. Most of the site to be developed in the industrial area would be covered by buildings, roadways, or parking lots. No other increase in land surface coverings is expected as a result of the General Aviation Alternative.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.1.3 Business/Technology Center Alternative

Impacts of the Business/Technology Center Alternative on regional soils and geology would not be significant. Effects on local soils and geology would result primarily from construction in the northeastern industrial area, expansion of the base golf course, and use of the airfield portion of the base for agriculture. Construction may involve grading, excavating, and recontouring the soils. These activities would minimally alter the soil profiles and have little effect on local topography. Approximately 1,000 acres would be disturbed for the Business/Technology Center Alternative by 2013 (Chapter 2.0, Table 2.3-8), with most of the disturbance occurring in the airfield area.

Use of this area for agricultural purposes, including growing cotton or soybeans, would be suitable for these soils based on the limitations defined by the SCS, provided best management practices are employed. Use of these soils for aquaculture would also be suitable, particularly areas with Norwood silty clay loam soil. Impacts on soils and geology with this alternative would be similar to those identified for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.1.4 Recreation/Tourism Alternative

Impacts of the Recreation/Tourism Alternative on regional soils and geology would not be significant. Effects on local soils and geology would result primarily from construction at proposed facilities, including a theme park/water park and additional golf courses, and use of a portion of the airfield for agriculture. Construction would involve grading, excavating, and recontouring the soils. These activities would minimally alter the soil profiles and would have little effect on local topography. Approximately 1,100 acres would be disturbed with the Recreation/Tourism Alternative by 2013 (Chapter 2.0, Table 2.3-12). Impacts on soils and geology from this alternative would be similar to those identified for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.1.5 No-Action Alternative

No major impacts to soils and geology of the base and the surrounding region would occur as a result of the No-Action Alternative. The construction and operations associated with this alternative would be minimal or nonexistent and restricted to maintenance-type activities. No cumulative impacts would result, and no mitigation measures would be required.

4.4.2 Water Resources

The potential impacts on water resources resulting from the Proposed Action and reuse alternatives are described in this section. Construction activities could alter soil profiles and natural drainages, which, in turn, may temporarily alter water flow patterns. Potential impacts on water quality from hazardous waste contamination are addressed in Section 4.3, Hazardous Materials and Hazardous Waste Management.

4.4.2.1 Proposed Action

Surface Water. With the Proposed Action, soils in the industrial area in the northeastern portion of the base and the areas to be used for the JRTC ISB activities would be compacted during new construction and some areas overlain by pavement or buildings, creating impervious surfaces that would result in a slight increase in stormwater runoff to stormwater drainage systems and subsequently Big Bayou and Bayou Rapides. Drainage patterns could be altered to divert water away from facilities and airfield pavements.

The amount of available surface water would not change with the Proposed Action. Stormwater discharge (nonpoint source) from the airfield, aviation support areas, and other industrial areas is expected to contain a reduced amount of contaminants such as fuels, oils, and other residues, resulting in improved surface water qualitv compared to preclosure conditions.

The Proposed Action would not affect surface water supply because no surface water would be used for domestic, industrial, or recreational purposes. In addition, no areas would be inundated nor would the potential for flooding increase as a result of the Proposed Action. No filling or draining of wetlands would occur with the Proposed Action. Further details on wetlands are provided in Section 4.4.5, Biological Resources.

The ground surface would be temporarily disturbed in areas where construction occurs. This could potentially affect the watershed or overall drainage system if there were increased erosion and sedimentation added to the runoff during construction periods.

Groundwater. No adverse impacts would occur to groundwater resources as a result of the Proposed Action.

The Proposed Action would result in an increased demand above baseline closure conditions for potable water for various reuses. With the Proposed Action, potable water demand would increase after the first year (Table 4.4-1), and would vary within the limits of drought-wet year cycles for the golf course and other irrigation uses. Opposing these demands, however, would be overall decreased use resulting from the decline in population in the Alexandria/Pineville area with closure of the base. Water demand in 2013 would be approximately 10 percent less than the preclosure ROI demand for groundwater.

Table 4.4-1

Projected Water Demand - Proposed Action*

Year	Projected Demand (MGD)	Projected Annual Demand (MG/yr)	Projected Baseline Demand (MG/yr)	Percent Increase Above Baseline
1998	0.12	44	7,334	0.6
2003	0.27	99	7,610	1.3
2013	0.54	197	7,701	2.5

Note: *Preclosure ROI demand averages approximately 24.0 MGD (8,760 MG/yr).

Current onsite water use represents approximately 2.2 percent of the total groundwater withdrawals by the City of Alexandria Water Department. The projected onsite demand in 2013 would represent approximately 1 percent of the total withdrawals by the city. Groundwater use with this alternative would not have a significant effect on drawdown or change in confining pressures in the groundwater aquifer.

The impact to groundwater quality is expected to be positive, based on the potential for less spillage, continued remediation and restoration efforts, and improved controls on materials handling.

Mitigation Measures. To minimize ponding and potential impacts to surface water runoff, construction designs should incorporate provisions to reduce stormwater runoff. The following practices could be implemented to reduce the impacts to surface water quality during construction:

- Create landscaped areas which are pervious to surface water;
- Minimize areas of surface disturbance;
- Control site runoff;
- Minimize time that disturbed areas are exposed to erosion;
- Schedule surface-disturbing activities during dry seasons; and
- Provide regular street sweeping.

Some proposed reuses may also be subject to National Pollutant Discharge Elimination System (NPDES) permit requirements for stormwater discharges during the construction period and for the duration of airport and other industrial operations. This provision is contained in the NPDES Permit Application Regulations for Storm Water Discharges issued by the EPA as a final rule in the *Federal Register* on November 16, 1990. Oil-water separators could be installed to improve water quality prior to discharge to stormwater drainage systems.

4.4.2.2 General Aviation Alternative

Surface Water. With the General Aviation Alternative, soils in the northeastern industrial area would be compacted during new construction and some areas overlain by pavement or buildings, creating impervious surfaces that would result in a slight increase in runoff to stormwater drainage systems and subsequently to Big Bayou and Bayou Rapides. Drainage patterns could be changed to divert water away from facilities and airfield pavements.

No change in the amount of available surface water would occur with this alternative. Stormwater discharge (nonpoint source) from the airfield, aviation support areas, and other industrial areas is expected to contain a reduced amount of contaminants such as fuels, oils, and other residues generally associated with airfield and other industrial operations, resulting in improved surface water quality.

The General Aviation Alternative would not affect surface water supply because no surface water would be used for domestic, industrial, or recreational purposes. In addition, no areas would be inundated, nor would the potential for flooding increase as a result of the General Aviation Alternative. No jurisdictional wetlands would be affected with this alternative, nor would filling or draining of wetlands occur. Expansion of the golf course would not affect the adjacent bayou.

The ground surface would be temporarily disturbed in areas where construction occurs. This could potentially affect the watershed or overall drainage system if there were increased erosion and sedimentation added to the runoff during construction periods.

Groundwater. With the General Aviation Alternative, no adverse impacts to groundwater resources would occur.

The General Aviation Alternative would result in an increased demand above baseline closure conditions for potable water for various reuses. With this alternative, potable water demand would increase after the first year (Table 4.4-2), and would vary within the limits of drought-wet year cycles for the golf course and other irrigation uses. Opposing these demands, however, would be overall decreased usage resulting from the decline in population in the Alexandria/Pineville area. Water demand in 2013 would be approximately 12 percent less than the preclosure ROI demand for groundwater.

Table 4.4-2

Projected Water Demand - General Aviation Alternative*

Year	Projected Demand (MGD)	Projected Annual Demand (MG/yr)	Projected Baseline Demand (MG/yr)	Percent Increase Above Baseline
1998	0.10	37	7,334	0.5
2003	0.19	69	7,610	0.9
2013	0.26	95	7,701	1.2

Note: *Preclosure ROI demand averages approximately 24.0 MGD (8,760 MG/yr).

Current onsite water use represents approximately 2.2 percent of the total groundwater withdrawals by the City of Alexandria Water Department. The projected onsite demand in 2013 would represent less than 1 percent of the total withdrawals by the city. This demand would reduce withdrawals slightly, but would have a negligible impact on the groundwater supply. Groundwater use associated with this alternative would not have a significant effect on drawdown or change the confining pressures in the groundwater aquifer.

The impact to groundwater quality is expected to be positive, based on the potential for less spillage, continued remediation and restoration efforts, and improved controls on materials handling.

Mitigation Measures. To minimize potential impacts to surface water runoff, construction designs should incorporate provisions to reduce stormwater runoff. The practices described for the Proposed Action could be implemented for this alternative. In addition, some proposed reuses with this alternative may be subject to NPDES permit requirements for stormwater discharges as described for the Proposed Action.

4.4.2.3 Business/Technology Center Alternative

Surface Water. With the Business/Technology Center Alternative, soils in the northeastern industrial area would be compacted during new construction and some areas overlain by pavement or buildings, creating impervious surfaces that would result in a slight increase in runoff to stormwater drainage systems and subsequently to Big Bayou and Bayou Rapides. Drainage patterns could be changed to divert water away from facilities and airfield pavements.

No change in the amount of available surface water would occur with this alternative. Stormwater discharge (nonpoint source) from the current aviation support areas and other industrial areas is expected to contain a reduced amount of contaminants generally associated with airfield and other industrial operations, resulting in an improvement in surface water quality. This impact is considered to be beneficial although quantitatively small.

The Business/Technology Center Alternative would not affect surface water supply because no surface water would be used for domestic, industrial, or recreational purposes. In addition, no area would be inundated, nor would the potential for flooding increase as a result of this alternative. No jurisdictional wetlands would be affected by this alternative, nor would filling or draining of wetlands occur. Expansion of the golf course would not affect the adjacent bayou. Agricultural uses, including aquaculture and nurseries, would not affect the hydrological character of any wetland areas.

Groundwater. With the Business/Technology Center Alternative, no adverse impacts to groundwater resources would occur.

This alternative would result in an increased demand above baseline closure conditions for potable water for various reuses. With the Business/Technology Center Alternative, potable water demand would increase (Table 4.4-3), and would vary within the limits of drought-wet year cycles for the golf course and other irrigation uses. Opposing these demands, however, would be overall decreased usage resulting from the decline in population in the Alexandria/Pineville area. Water demand in 2013 would be approximately 11 percent less than the preclosure ROI demand for groundwater. Groundwater withdrawal effects with this alternative would be similar to those described for the General Aviation Alternative.

Table 4.4-3

Projected Water Demand - Business/Technology Center Alternative*

Year	Projected Demand (MGD)	Projected Annual Demand (MG/yr)	Projected Baseline Demand (MG/yr)	Percent Increase Above Baseline
1998	0.12	44	7,334	0.6
2003	0.21	77	7,610	1.0
2013	0.32	117	7,701	1.5

Note: *Preclosure ROI demand averages approximately 24.0 MGD (8,760 MG/yr).

The impact to groundwater quality is expected to be positive, based on the greatly reduced potential for spillage and continued remediation and restoration efforts.

Mitigation Measures. To minimize potential impacts to surface water runoff, construction designs should incorporate provisions to reduce stormwater runoff. The practices described for the Proposed Action could be implemented to reduce the impacts to surface water quality during construction. In addition, some proposed reuses with this alternative may also be subject to NPDES permit requirements for stormwater discharges as described for the Proposed Action.

4.4.2.4 Recreation/Tourism Alternative

Surface Water. With the Recreation/Tourism Alternative, soils in areas of possible construction would be compacted and some areas overlain by pavement or buildings, creating impervious surfaces that would result in a slight increase in runoff to stormwater drainage systems and subsequently to Big Bayou and Bayou Rapides. Drainage patterns could be changed to divert water away from facilities and airfield pavements.

No change in the amount of available surface water would occur with this alternative. Stormwater discharge (nonpoint source) from the site is expected to contain a reduced amount of contaminants generally associated with airfield and other industrial operations, resulting in a continuing improvement in surface water quality. This impact is considered to be beneficial although quantitatively small.

The Recreation/Tourism Alternative would not affect surface water supply because no surface water would be used for domestic, industrial, or recreational purposes. In addition, no areas would be inundated, nor would the potential for flooding increase as a result of the Recreation/Tourism Alternative.

No jurisdictional wetlands would be affected by this alternative, nor would filling or draining of wetlands occur. Expansion of the golf course would not affect the adjacent bayou. Agricultural uses, including aquaculture and nurseries, and construction of recreational facilities and a theme park/water park, would not be expected to affect the hydrological character of any wetland areas.

The ground surface would be temporarily disturbed in areas where construction occurs. This could potentially affect the watershed or overall drainage system if increased erosion and sedimentation were added to the runoff during construction periods.

Groundwater. With the Recreation/Tourism Alternative, no adverse impacts to groundwater resources would occur.

This alternative would result in an increased demand above baseline closure conditions for potable water for various reuses. With the Recreation/Tourism Alternative, demand would increase after the first year (Table 4.4-4), and would vary within the limits of drought-wet year cycles for the golf course and other areas requiring irrigation. Opposing these demands, however, would be overall decreased usage resulting from the lower population in the Alexandria/Pineville area. Water demand in 2013 would be approximately 11 percent less than the preclosure ROI demand for groundwater.

Table 4.4-4

Projected Water Demand - Recreation/Tourism Alternative*

Year	Projected Demand (MGD)	Projected Annual Demand (MG/yr)	Projected Baseline Demand (MG/yr)	Percent Increase Above Baseline
1998	0.10	37	7,334	0.5
2003	0.20	73	7,610	1.0
2013	0.27	99	7,701	1.3

Note: *Preclosure ROI demand averages approximately 24.0 MGD (8,760 MG/yr).

The impact to groundwater quality is expected to be positive, based on the greatly reduced potential for spillage and continued remediation and restoration efforts.

Mitigation Measures. To minimize potential impacts to surface water runoff, construction designs should incorporate provisions to reduce stormwater runoff. The practices described for the Proposed Action could be implemented to reduce the impacts to surface water quality during construction. In addition, some proposed reuses with this alternative may be subject to NPDES permit requirements for stormwater discharges as described for the Proposed Action.

4.4.2.5 No-Action Alternative

The No-Action Alternative would have positive effects on both surface water and groundwater. With very limited operations and a reduction in the number of base personnel, their families, and some ancillary workers, water demands would be minimal and would be accommodated from existing supply systems. No cumulative impacts would result, and no mitigation measures would be required.

4.4.3 Air Quality

Air quality impacts could occur during construction and operations associated with the Proposed Action and alternatives for the reuse of England AFB. Intermittent construction-related impacts could result from fugitive dust (particulate matter) and construction equipment emissions. Operational impacts could occur from (1) mobile sources such as aircraft, aircraft operation support equipment, commercial transport vehicles, and personal vehicles; (2) point sources such as incinerators and storage tanks; and (3) secondary emission sources associated with a general population increase, such as residential heating.

The methods selected to analyze impacts depend on the type of air emission source being examined. Air quality analytical methods are summarized here and presented in detail in Appendix E. The primary emission source categories associated with the Proposed Action and alternatives include construction, aircraft, vehicles, point sources, and indirect source emissions related to population increases. Because construction-phase emissions are generally considered temporary, the analysis was limited to estimating the amount of uncontrolled fugitive dust that may be emitted from disturbed areas. Analysis for point source and indirect source emissions consisted of quantifying the emissions and evaluating how these emissions would affect maintaining the National/Louisiana Ambient Air Quality Standards (NAAQS/LAAQS).

Rapides Parish has relatively good air quality and is considered in attainment for all criteria pollutants. The good air quality is due to the small number of major pollution sources and good atmospheric dispersion of pollutants (Section 3.4.3.1). Because Rapides Parish is an attainment area, air quality management or attainment plans are not required.

The ambient effects of aircraft and mobile source emissions were analyzed by modeling. The Emissions and Dispersion Modeling System (EDMS) was used to simulate the dispersion of emissions from airport operations (U.S. Department of Transportation, Federal Aviation Administration, and U.S. Air Force 1988). EDMS was developed jointly by the FAA and the Air Force specifically to generate airport and airbase emission inventories and to calculate the concentrations caused by these emissions as they disperse downwind. The model is run in a screening mode utilizing an array of 1-hour minimum dispersion conditions. The following procedures were followed in estimating the emission inventories for the Proposed Action and alternatives, and are presented in detail in Appendix I.

- For the source category Aircraft Flying Operations, emissions were predicted by the EDMS model based on projected types of aircraft and estimated frequency of flight operations for each aircraft.

- For the source categories Aircraft Ground Equipment, Waste Burning, Solvent Use, and Petroleum Storage and Transfer, emission estimates were developed using procedures and emission factors described in the *Manual Calculation Methods for Air Pollution Inventories* (U.S. Air Force Occupational and Environmental Health Laboratory 1988) and *Compilation of Air Pollutant Emission Factors, AP-42* (Environmental Protection Agency 1985a,b).

- For the Fuel Combustion source category, emission estimates were calculated using natural gas consumption and emission factors in the *Air Quality Handbook for Preparing Environmental Impact Reports* (South Coast Air Quality Management District 1987).

- For the source categories Industrial Processes and Miscellaneous Processes (includes farming operations, construction and demolition, entrained road dust, fires, and other natural sources), emission factors for potential processes were obtained from *AP-42* (Environmental Protection Agency 1985a,b).

- For the source category Motor Vehicles, emission factors for volatile organic compounds (VOC), carbon monoxide (CO), and nitrogen oxides (NO_x) were obtained from Mobile 4 factors in *AP-42* (Environmental Protection Agency 1985a,b), while for sulfur oxides (SO_x) and particulates, emission factors were obtained from EMFAC7PC (California Air Resources Board 1990).

4.4.3.1 Proposed Action

Total estimated emissions as a result of the Proposed Action are presented in Table 4.4-5 for modeled years 1998, 2003, and 2013. Emissions at closure are shown in Table 3.4-6. The EDMS model uses EPA aircraft emission factors and information on peak and annual landing/takeoff cycles to produce an emissions inventory report for the aircraft operations. Emissions for all other categories were calculated as previously described.

Table 4.4-5

Pollutant Emissions Associated With the Proposed Action (tons per day)

Pollutant[1]	Rapides Parish Emission Inventory[2]	Proposed Action Emissions[3]			Percent Increase in Parish Emissions		
		1998	2003	2013	1998	2003	2013
NO_x	129.2	0.40	0.54	0.69	0.3	0.4	0.5
VOC	24.1	0.53	0.86	1.17	2.2	3.6	4.9
PM_{10}	43.7	0.27	0.27	0.30	0.6	0.6	0.7
CO	82.9	3.24	5.01	6.47	3.9	6.0	7.8
SO_2	58.3	0.05	0.08	0.11	0.1	0.1	0.2

Notes: [1]ROI currently attaining standards for all pollutants.
[2]Refer to Table 3.4-5.
[3]See Appendix I for emission information by source category.

Construction. Fugitive dust and combustive emissions would be generated during construction activities associated with airfield, aviation support, and industrial land uses. These emissions would be greatest during site clearing and grading activities. Uncontrolled fugitive dust (particulate matter) emissions from ground-disturbing activities were estimated to be emitted at a rate of

1.2 tons per acre per month (Environmental Protection Agency 1985a). The PM_{10} fraction of the total fugitive dust emissions is assumed to be 50 percent, or 0.6 ton per acre per month.

Construction at England AFB would disturb approximately 160 acres between 1993 and 1998. Assuming that during a single month of this period a maximum of 60 acres would be disturbed, unmitigated particulate matter emissions would be emitted at a maximum rate of 72 tons per month (36 tons per month of PM_{10}). These emissions would elevate short-term particulate concentrations at receptors close to the construction areas. However, the elevated concentrations would be a temporary effect that would fall off rapidly with distance.

Operations. Total estimated emissions associated with operations for the Proposed Action are presented in Table 4.4-5 for modeled years 1998, 2003, and 2013. Estimates of aircraft operation emissions are based on EPA aircraft emission factors provided as part of the built-in data base in the EDMS model. The EDMS model uses EPA emission factors and information on both peak and annual operations (including takeoff, runway climb and approach, runway queuing, taxi-in and taxi-out, and idling) to produce an emissions inventory report. Estimates for all other categories of emissions were calculated as described in Section 4.4.3.

Potential impacts to air quality as a result of emissions from the Proposed Action operations were evaluated in terms of two *spatial scales: regional* and local. The regional-scale analysis considered the potential for project emissions to cause or contribute to a nonattainment condition in Rapides Parish. The local-scale analysis evaluated the potential impact to ambient air quality concentrations in the immediate vicinity of the base.

Regional Scale. Emissions from the Proposed Action would increase the pollution burden in Rapides Parish. The percentage increase in the emissions of each pollutant in 1998, 2003, and 2013 with respect to the 1988 Rapides Parish emissions are presented in Table 4.4-5. CO would have the greatest increase with values ranging from 4 to 8 percent. VOCs would have the second largest increase ranging from 2 to 5 percent. Increases in the other pollutants would be less than 1 percent.

The increases shown in Table 4.4-5 are potentially greater than would actually occur, because a reduction in pollutant emissions resulting from the decline in population in Rapides Parish due to base closure was not included in the emissions calculations. In addition, the transfer of commercial and general aviation activities from Alexandria Esler Regional Airport to England AFB would also result in a reduction in pollutant emissions in the airport area, which would partially offset the increase in emissions due to the Proposed Action.

Gaseous pollutant concentrations are not monitored in Rapides Parish. However, pollutant concentrations in this area can be estimated by an interpolation of values from a spatial analysis of concentrations measured at other Louisiana monitoring stations. These interpolated concentrations are presented in Table 4.4-6.

If it is assumed that regional ambient pollution concentrations are directly proportional to emissions (so-called proportional model), an 8-percent increase in CO emissions would cause ambient concentrations of about 6,060 micrograms per cubic meter ($\mu g/m^3$) for the 1-hour average peak concentration and 3,830 $\mu g/m^3$ for the 8-hour average peak concentration. These values are well below the CO ambient standards (Table 4.4-6). The small increase in emissions of the other criteria pollutants would not cause violations of the ambient air quality standards; therefore, emissions from the Proposed Action would not affect the attainment status of Rapides Parish for criteria pollutants.

Local Scale. The impacts of operations emissions from airport-related activities associated with the Proposed Action were assessed using the EDMS model. Peak-hour scenarios for emissions from both aircraft operations and vehicle traffic serving the airport were modeled. A summary of the EDMS analysis is presented in Table 4.4-6. The results show that for a peak-hour airport operation scenario, the maximum 1-hour pollutant concentration would occur on the property line located approximately 1,500 feet downwind from the southeast end of Runway 14/32, the northwest/southeast-oriented runway. The primary contributing factor would be aircraft exhaust emitted while the aircraft are in a queue, awaiting takeoff. The modeling results indicate that no local ambient pollutant concentrations produced by emissions from the Proposed Action wou'd cause the NAAQS/LAAQS to be exceeded. Thus, the attainment status of the local area would be maintained.

Table 4.4-6

Air Quality Modeling Analyses of the Airport and Vicinity Proposed Action ($\mu g/m^3$)

Pollutant	Averaging Time	Project Impact[1]			Background[2] Concentration	NAAQS/ LAAQS
		1998	2003	2013		
CO	8-hour	3,031	3,388	3,668	3,549	10,000
	1-hour	4,330	4,840	5,240	5,609	40,000
NO_2[3]	Annual	28	28	31	36	100
SO_2	Annual	7	7	8	10	80
	24-hour	28	28	31	52	365
	3-hour	62	62	69	115	1,300
PM_{10}	Annual (arithmetic)	1	1	1	24	50
	24-hour	5	6	6	63	150

Notes: [1]Maximum impact in all cases occurred at a receptor located near the property line approximately 1,500 feet downwind from the southeast end of Runway 14/32.

[2]Background concentrations for PM_{10} were assumed to equal the mean of the first high values monitored at Alexandria from 1989 to 1991. Other background concentrations were obtained by an interpolation of values from a spatial analysis of concentrations.

[3]Assumed that all NO_x was NO_2.

Cumulative Impacts. Other actions in the central Louisiana region include the realignment of units at Fort Polk, construction of a federal correctional facility near Pollock, and completion of the Alexandria urban segment of Interstate 49 (see Section 2.5).

The realignment of units at Fort Polk would have negligible impacts on air quality in the England AFB area because Fort Polk is about 50 miles west of the base. However, the impacts on air quality would be beneficial because of a net reduction of 14,600 people in Vernon Parish, with a concurrent reduction in motor vehicle emissions.

The potential construction and operation of the Pollock Federal Correctional Facility, approximately 10 miles north of Alexandria in Grant Parish, would also produce negligible impacts on air quality in Rapides Parish. Construction would produce some temporary fugitive dust and gaseous pollutant emissions. Emissions resulting from operation of the facility would be relatively small and would be dispersed prior to entering Rapides Parish.

The construction of a 20-mile segment of Interstate 49 through the Alexandria urban area would produce pollutant emissions from construction equipment and other motor vehicles. The emissions would consist of fugitive dust and gaseous emissions from vehicle exhaust. These construction emissions would cease with completion of the project in 1996. Emissions from traffic on Interstate 49 would cause some increase in pollutant concentrations in Rapides Parish. However, the combined emissions from the Proposed Action and Interstate 49 traffic would not produce pollutant concentrations that would exceed the NAAQS/LAAQS.

In summary, cumulative impacts on air quality from other potential actions would not affect the region's attainment status for criteria pollutants.

Mitigation Measures. Although the Proposed Action would not violate the NAAQS/LAAQS, good construction and operating procedures should be followed to minimize pollutant emissions. These procedures should include the following:

- Application of water, as required, during ground-disturbing activities to control fugitive dust;
- Institute a regular preventative maintenance program for operating equipment to prevent emission increases due to mechanical problems;
- Comply with measures contained in *Standards for Specifying Construction of Airports* (U.S. Department of Transportation, Federal Aviation Administration 1990b); and
- Schedule aircraft operations to minimize the number of aircraft operating during peak hours.

4.4.3.2 General Aviation Alternative

The primary difference between this alternative and the Proposed Action is that only general aviation and air cargo operations are proposed. Nonaviation land uses would include industrial (manufacturing and warehousing), commercial, institutional (medical and educational), residential, recreational, and agricultural.

Construction. Construction impacts with this alternative would be less than those described for the Proposed Action. Approximately 385 acres would be disturbed by construction from 1993 to 1998. It was assumed that a maximum of 100 acres would be disturbed during a 1-month period, resulting in unmitigated particulate matter emissions of 120 tons per month (60 tons per month of PM_{10}). These emissions would elevate particulate concentrations in areas close to construction locations; however, the concentrations would fall off rapidly with distance from the construction areas.

Operations. The results of the emission calculations associated with operations of the General Aviation Alternative for modeled years 1998, 2003, and 2013 are summarized in Table 4.4-7. In addition, the percent increase in the 1988 parish emissions that would occur in 1998, 2003, and 2013 as a result of this alternative is presented in Table 4.4-7. Emission increases for the General Aviation Alternative would be less than those described for the Proposed Action. CO concentrations, as in the case of the Proposed Action, would have the largest increase (6% in 2013). VOCs would have the second largest increase (4% in 2013). The increase in the remaining pollutant emissions would be very small. Thus, regional concentrations would not exceed the NAAQS/LAAQS and Rapides Parish would continue to be in attainment for all criteria pollutants.

Table 4.4-7

Pollutant Emissions Associated With the General Aviation Alternative (tons per day)

Pollutant[1]	Rapides Parish Emission Inventory[2]	General Aviation Alternative Emissions[3]			Percent Increase in Parish Emissions		
		1998	2003	2013	1998	2003	2013
NO_x	129.2	0.16	0.26	0.35	0.1	0.2	0.3
VOC	24.1	0.35	0.70	0.92	1.5	2.9	3.8
PM_{10}	43.7	0.23	0.23	0.26	0.5	0.5	0.6
CO	82.9	2.12	3.92	4.91	2.6	4.7	5.9
SO_2	58.3	0.02	0.03	0.06	0.0	0.1	0.1

Notes: [1]ROI currently attaining standards for all pollutants.
[2]Refer to Table 3.4-5.
[3]See Appendix I for emission information by source category.

A summary of the EDMS analysis of impacts from emissions associated with airport operations for this alternative is presented in Table 4.4-8. The maximum 1-hour pollutant concentration would occur at the same location as the Proposed Action. The modeling results indicate that the local ambient pollutant concentrations would be less than those described for the Proposed Action. The NAAQS/LAAQS would not be exceeded and the local area would remain in attainment for all criteria pollutants.

Table 4.4-8

Air Quality Modeling Analyses of the Airport and Vicinity General Aviation Alternative ($\mu g/m^3$)

Pollutant	Averaging Time	Project Impact[1] 1998	Project Impact[1] 2003	Project Impact[1] 2013	Background[2] Concentration	NAAQS/ LAAQS
CO	8-hour	1,386	1,911	1,967	3,549	10,000
	1-hour	1,980	2,730	2,810	5,609	40,000
NO_2[3]	Annual	2	2	2	36	100
SO_2	Annual	1	1	1	10	80
	24-hour	4	4	4	52	365
	3-hour	10	10	10	115	1,300
PM_{10}	Annual (arithmetic)	0.2	0.3	0.4	24	50
	24-hour	1	1	1	63	150

Notes: [1]Maximum impact in all cases occurred at a receptor located near the property line approximately 1,500 feet downwind from the southeast end of Runway 14/32.
[2]Background concentrations for PM_{10} assumed to equal the mean of the first high values monitored at Alexandria from 1989 to 1991. Other background concentrations were obtained by an interpolation of values from a spatial analysis of concentrations.
[3]Assumed that all NO_x was NO_2.

Cumulative Impacts. Cumulative impacts would be the same as those described for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those recommended for the Proposed Action.

4.4.3.3 Business/Technology Center Alternative

This alternative consists of converting the base to an entirely nonaviation reuse. With this alternative, land uses proposed for the developed portion of the base include industrial (manufacturing and warehousing), commercial, residential, institutional (medical and educational), and recreational. Most of the existing airfield would be converted to various agricultural uses.

Construction/Agriculture. Fugitive dust impacts from this alternative would be greater than for the Proposed Action or the General Aviation Alternative because of increased disturbance in the agricultural area. Approximately 1,000 acres would be disturbed during the first 10 years. It was assumed that a maximum of 200 acres would be disturbed during a 1-month period, resulting in unmitigated particulate matter emissions of 240 tons per month (120 tons of PM_{10} per month). The impact of these emissions would elevate particulate concentrations in areas close to the ground disturbance. However, the elevated concentrations would be temporary and would rapidly decrease with distance from the disturbed area.

Operations. The results of the emission calculations associated with operations of the Business/Technology Center Alternative for modeled years 1998, 2003, and 2013 are summarized in Table 4.4-9. This table also provides the percent increase in the 1988 parish emissions that would occur in 1998, 2003, and 2013. Emission increases for this alternative are less than for the Proposed Action but are of the same magnitude as the General Aviation Alternative. The increase in the total pollutant burden of the parish would be small. Regional pollutant concentrations would not exceed the NAAQS/LAAQS and Rapides Parish would continue to be in attainment for all criteria pollutants. Additionally, because of the low emission rates, local concentrations would not exceed the NAAQS/LAAQS.

Table 4.4-9

Pollutant Emissions Associated With the Business/Technology Center Alternative (tons per day)

Pollutant[1]	Rapides Parish Emission Inventory[2]	Business/Technology Center Alternative Emissions[3]			Percent Increase in Parish Emissions		
		1998	2003	2013	1998	2003	2013
NO_x	129.2	0.23	0.41	0.58	0.2	0.3	0.4
VOC	24.1	0.42	0.77	1.06	1.7	3.2	4.4
PM_{10}	43.7	0.29	0.41	0.55	0.7	0.9	1.3
CO	82.9	1.86	3.50	4.78	2.2	4.2	5.8
SO_2	58.3	0.12	0.24	0.35	0.2	0.4	0.6

Notes: [1]ROI currently attaining standards for all pollutants.
[2]Refer to Table 3.4-5.
[3]See Appendix I for emission information by source category.

Cumulative Impacts. Cumulative impacts would be the same as those described for the Proposed Action.

Mitigation Measures. Although the Business/Technology Center Alternative would not violate the NAAQS/LAAQS, the following measures should be implemented to minimize pollutant emissions:

- Apply water, as required, during ground-disturbing activities to control fugitive dust;
- *Disperse manufacturing industries, where practical, to avoid* concentration of emission sources; and
- All industries should comply with the applicable Louisiana emission standards and construction/operation permit requirements.

4.4.3.4 Recreation/Tourism Alternative

This alternative is also a nonaviation alternative which focuses on redevelopment of England AFB into a recreation/tourism center for local residents and tourists from the surrounding region. Land uses proposed for the development include industrial (manufacturing and warehousing), commercial, residential, institutional (medical and educational), and recreational. For the undeveloped areas of the base, primarily the airfield, the development of extensive recreational facilities is proposed, with a portion of the airfield converted to various agricultural uses. This alternative would have the lowest operational emissions of all three alternatives. Most emissions would be from motor vehicles.

Construction/Agriculture. Approximately 1,075 acres would be disturbed over the 20-year period. It was assumed that a maximum of 120 acres would be disturbed during a 1-month period, resulting in unmitigated particulate matter emissions of 144 tons per month (72 tons per month of PM_{10}). The impact of these emissions would cause elevated concentrations of particulates close to the disturbed areas. However, the elevated concentrations would be a temporary effect that would rapidly decrease with distance from the disturbed area.

Operations. The results of the emissions calculations associated with operations of the Recreation/Tourism Alternative for modeled years 1998, 2003, and 2013 are summarized in Table 4.4-10. This table also provides the percentage increase in the 1988 parish emissions that would occur in 1998, 2003, and 2013. CO would have the greatest emission increase, reaching 4 percent in 2013. VOCs would have the next highest increase of 3 percent. The remaining pollutant increases would be 1 percent or less. These relatively small emission increases would not produce ambient concentrations that would exceed the NAAQS/LAAQS on the regional or local scale. Thus, Rapides Parish would continue to maintain an attainment classification for all criteria pollutants.

Table 4.4-10

Pollutant Emissions Associated With the Recreation/Tourism Alternative (tons per day)

Pollutant	Rapides Parish Emission Inventory[1]	Recreation/Tourism Alternative Emissions[2]			Percent Increase in Parish Emissions		
		1998	2003	2013	1998	2003	2013
NO_x	129.2	0.12	0.26	0.34	0.1	0.2	0.3
VOC	24.1	0.27	0.57	0.77	1.1	2.4	3.2
PM_{10}	43.7	0.32	0.37	0.44	0.7	0.8	1.0
CO	82.9	1.19	2.47	3.35	1.4	3.0	4.0
SO_2	58.3	0.02	0.03	0.05	0.0	0.1	0.1

Notes: [1]Refer to Table 3.4-5.
[2]See Appendix I for emission information by source category.

Cumulative Impacts. Cumulative impacts would be the same as described for the Proposed Action.

Mitigation Measures. Although the Recreation/Tourism Alternative would not result in the violation of the NAAQS/LAAQS, good construction and operating procedures should be followed to minimize pollutant emissions. These procedures should include the following:

- Apply water, as required, during ground-disturbing activities to control fugitive dust; and
- Institute a regular preventative maintenance program for operating equipment to prevent emission increases due to mechanical problems.

4.4.3.5 No-Action Alternative

The No-Action Alternative would not adversely affect air quality. Continued maintenance of the base at the closure level of activity, including use of the existing power and space-heating systems, would be at substantially reduced levels while the base is in caretaker status. The closure emission inventory for England AFB is presented in Table 3.4-6 (Chapter 3.0).

There may be some level of air quality benefit associated with maintaining the base at a reduced level of activity compared to the levels of activity associated with either the Proposed Action or reuse alternatives.

Cumulative Impacts. Because the impact on air quality resulting from the No-Action Alternative would be negligible, there would be no adverse cumulative impact.

4.4.4 Noise

The noise impact analysis considers the extent and magnitude of noise levels generated by the Proposed Action and alternatives on local human and animal populations using the predictive models discussed below. The baseline noise conditions and predicted noise levels were assessed with respect to potential annoyance, speech interference, sleep disturbance, hearing loss, land use compatibility, and effects on human health and animals. The metrics used to evaluate noise are the day-night sound level (DNL) and the energy equivalent continuous noise level (L_{eq}), which are supplemented occasionally by the Sound Exposure Level (SEL) and maximum instantaneous sound level (L_{max}) (see Appendix H for an expanded discussion of these metrics).

Methods used to quantify the effects of noise, such as annoyance, speech interference, sleep disturbance, health effects, and hearing loss, have undergone extensive scientific development during the past several decades. The most reliable measures at present are noise-induced hearing loss and annoyance. Extra-auditory effects (those not directly related to hearing capability) are also important, although they are not as well understood. The current scientific consensus is that "evidence from available research reports is suggestive, but it does not provide definitive answers to the question of health effects, other than to the auditory system, of long-term exposure to noise" (National Academy of Sciences 1981). The effects of noise are summarized in this section and a detailed description is provided in Appendix H.

Annoyance. Noise annoyance is defined by the EPA as any negative subjective reaction to noise on the part of an individual or group. Table 4.4-11 presents the results of over a dozen studies of transportation modes, including airports, investigating the relationship between noise and annoyance levels. This relationship has been suggested by the National Academy of Sciences (1977) and recently reevaluated (Fidell *et al.* 1988) for use in describing human reaction to semi-continuous (transportation) noise. These data are shown to provide a perspective on the level of annoyance that might be anticipated. For example, 15 to 25 percent of persons exposed to DNL of 65 to 70 decibels (dB) would be highly annoyed by the noise levels.

Table 4.4-11

Percentage of Population Disturbed by Exposure to Noise

DNL Interval in dB	Percentage of Persons Disturbed
<65	<15
65-70	15-25
70-75	25-37
75-80	37-52

Source: Adapted from National Academy of Sciences 1977.

Speech Interference. Noise affects daily life by prevention or impairment of speech communication. In a noisy environment, understanding speech is diminished when speech signals are masked by intruding noises. Reduced intelligibility of speech may also have other effects; for example, if the understanding of speech is interrupted, performance may be reduced, annoyance may increase, and learning may be impaired. Research suggests that aircraft flyover noise that exceeds approximately 60 dB (maximum instantaneous sound level [L_{max}]) interferes with speech communication (Pearsons and Bennett 1974; Crook and Langdon 1974). Increasing the level of the flyover noise maximum to 80 dB will reduce the intelligibility to zero, even if the person speaks in a loud voice. This interference lasts as long as the event, which is momentary for a flyover.

Sleep Interference. The effects of noise on sleep are of concern, primarily in assuring suitable residential environments. DNL incorporates consideration of sleep disturbance by assigning a 10-dB penalty to nighttime hours. SEL may be used to supplement DNL in evaluating sleep disturbance. When SEL is used to evaluate sleep disturbance, SEL values are translated to percent of people awakened. The relationship between percent awakened and SEL is presented in Appendix H. This relationship, however, does not reflect habituation; therefore, long-term sleep disturbance effects are not addressed by SEL. SEL takes into account an event's sound intensity, frequency, content, and time duration, by measuring the total A-weighted sound energy of the event and incorporating it into a single number. Unlike DNL, which describes the daily average noise exposure, SEL describes the normalized noise from a single flyover, called an event.

Studies (Lukas 1975; Goldstein and Lukas 1980) show great variability in the percentage of people awakened by exposure to noise. A recent review (Pearsons *et al.* 1989) of the literature related to sleep disturbance, including field as well as laboratory studies, suggests that habituation may reduce the effect of noise on sleep. The authors point out that the relationship between noise exposure and sleep disturbance is complex and affected by the interaction of many variables. The large differences between the findings of the laboratory and field studies make it difficult to determine the best relationship to use. The method developed by Lukas would estimate seven times more awakening than the field results reported by Pearsons.

Hearing Loss. Hearing loss is measured in decibels and refers to a permanent auditory threshold shift of an individual's hearing. The EPA (1974) has recommended a limiting daily energy value of L_{eq} 70 dBA to protect against hearing impairment over a period of 40 years. This daily energy average would translate into a DNL value of approximately 75 dB or greater. Based on EPA recommendations (1974), hearing loss is not expected in people exposed to DNL 75 dB or less. The potential for hearing loss involves direct exposure, on a regular, continuing, long-term basis, to DNLs above 75 dB. The Federal Interagency Committee on Urban Noise (Code of Federal Regulations 1985) states that hearing loss due to noise (1) may begin to occur in people exposed to long-term noise levels of DNL 75 dB and above, (2) will not likely occur in people exposed to noise levels between DNL 70 and 75 dB, and (3) will not occur in people exposed to noise levels less than DNL 70 dB.

Health. Research investigating the relationship between noise and adverse extra-auditory health effects has been inconclusive. Alleged extra-auditory health consequences of noise exposure which have been studied include birth defects, psychological illness, cancer, stroke, hypertension, and cardiac illnesses. Although hypertension appears to be the most biologically plausible of these consequences, studies addressing this issue have failed to provide adequate support. Studies that have found negative consequences have failed to be replicated, thereby questioning the validity of those studies (Frerichs *et al.* 1980; Anton-Guirgis *et al.* 1986). Studies that have controlled for multiple factors have shown no, or very weak, associations between noise exposure and extra-auditory effects (Thompson and Fidell 1989). The current state of technical knowledge cannot support inference of a causal or consistent relationship, nor a quantitative dose-response, between residential aircraft noise exposure and health consequences.

Animals. Literature concerning the effects of noise on animals is minimal, and most studies have focused on the relation between dosages of continuous noise and their effects (Belanovskii and Omel'yanenko 1982; Ames 1974). A review of 209 claims pertinent to aircraft noise spanning a 32-year period suggested that economic loss was small, that the major response was panic induced in animals, and that experimental literature is inadequate to document long-term or subtle effects (Bowles *et al.* 1990).

Land Use Compatibility. Estimates of total noise exposure resulting from aircraft operations, as expressed using DNL, can be interpreted in terms of the compatibility with designated land uses. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise (U.S. Department of Transportation 1980). Based on these guidelines, suggested compatibility guidelines for evaluating land uses in aircraft noise exposure areas were developed by the FAA and are presented in Section 3.4.4. The land use compatibility guidelines are based on annoyance and hearing loss considerations previously described.

Part 150 of the FAA regulations describes the procedures, standards, and methods governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs. It prescribes use of yearly DNL in the evaluation of airport noise environments. It also identifies those land use types that are normally compatible with various levels of exposure. Compatible or incompatible land use is determined by comparing the predicted DNL level at a site with the recommended land uses.

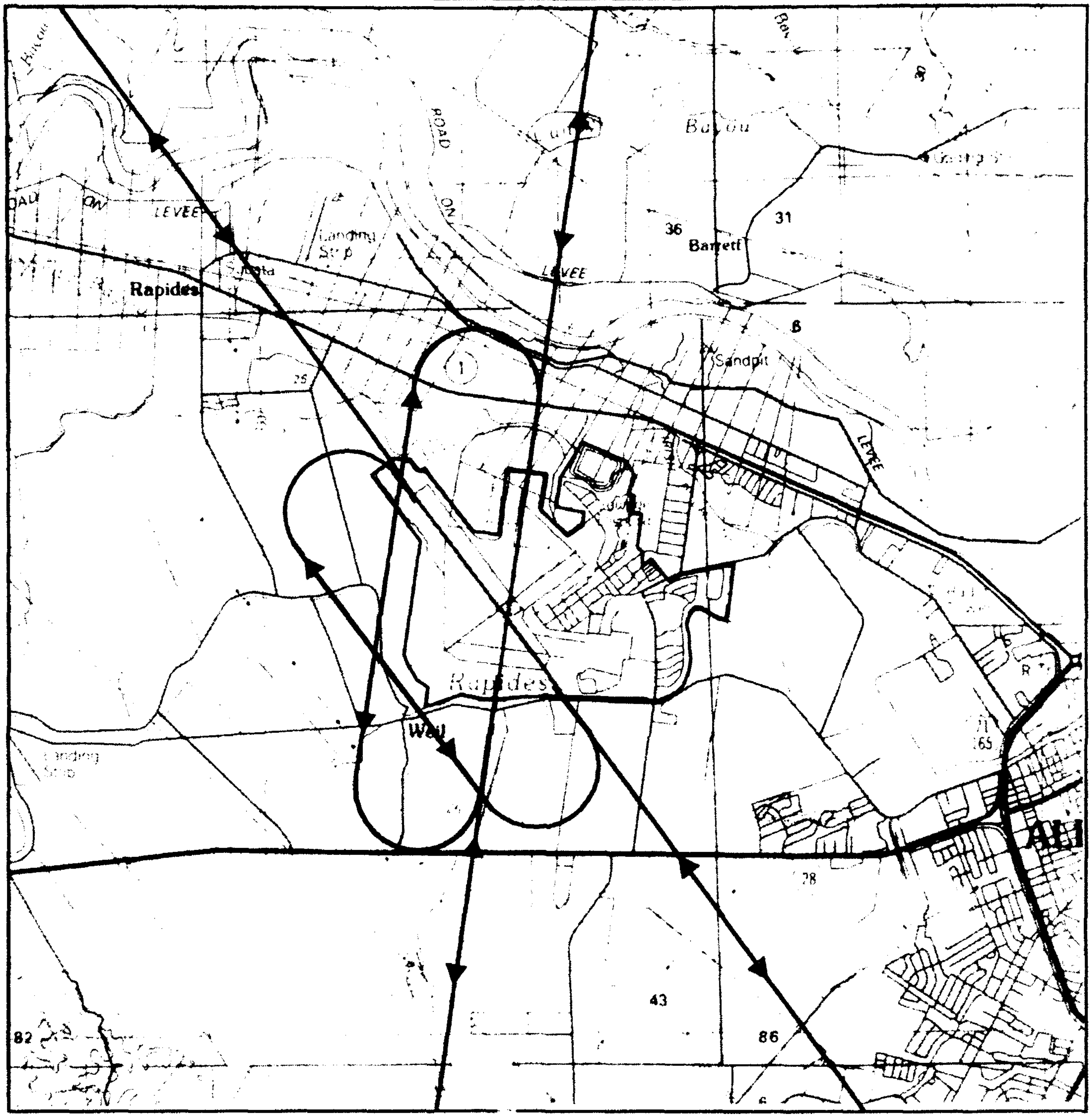
Noise Modeling. To define noise impacts from aircraft operations at England AFB, the FAA-approved Noise Exposure Model (NOISEMAP) version 6.0 (Moulton 1990) was used to predict DNL 65, 70, and 75 dB noise contours and SEL values for noise-sensitive receptors. Noise contours were generated for the Proposed Action and General Aviation Alternative for the baseline year (1993) and three future year projections (1998, 2003, and 2013). These contours were overlaid on a U.S. Geological Survey map of the base and vicinity. Input data to NOISEMAP version 6.0 include information on aircraft types; runway use; takeoff and landing flight tracks; aircraft altitude, speeds, and engine power settings; and number of daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) operations.

Surface vehicle traffic noise levels for roadways in the vicinity of England AFB were analyzed using the Federal Highway Administration (FHWA) Highway Noise Model (1978). This model incorporates vehicle mix, traffic volume projections, and speed to generate DNL values.

Major Assumptions. Aircraft operations, fleet mix, and other detailed assumptions are provided in Appendix H. Flight tracks were assumed to be straight for arrivals and departures and included two closed-loop tracks for touch-and-go general aviation (propeller-driven aircraft) operations (Figure 4.4-1). All operations were assumed to follow standard takeoff and approach profiles provided by the FAA's Integrated Noise Model (INM) database Version 3.9 (U.S. Department of Transportation, Federal Aviation Administration 1982) and the NOISEMAP database Version 6.0. The phasing out of Stage 2 aircraft, and their subsequent replacement with quieter Stage 3 aircraft by the year 2000 in accordance with FAA regulations, is reflected in the aircraft operations mix.

The criteria that define Stage 2 and Stage 3 aircraft are described in FAR Part 36 (U.S. Department of Transportation, Federal Aviation Administration 1988). Noise level limits are defined for takeoff, approach, and sideline measurements. The modeled aircraft operations reflect this phaseout by replacing the B-727-200 (Stage 2) with MD-82 (Stage 3).

Because Runway 14/32 is longer than Runway 18/36 (9,350 feet versus 7,000 feet), it was assumed that the commercial (commuter), air cargo, and military jets would use Runway 14/32 only. For the Proposed Action, air taxi and general aviation aircraft were assumed to use Runway 14/32 for 15 percent of operations and Runway 18/36 for 85 percent of operations. Military C-130 aircraft were assumed to use the runways equally. For the General Aviation Alternative, it was assumed that air cargo aircraft would use Runway 14/32 only and general aviation aircraft would use the runways equally. For the Proposed Action and the General Aviation Alternative, it was assumed 20 percent of the propeller-driven general aviation aircraft would use the closed-loop touch-and-go tracks.



EXPLANATION

Direction of Travel on Flight Path (Arrival, Departure, and Closed-Loop)

0 1/4 1/2 1 MILES

Flight Tracks - All Aviation Alternatives

Figure 4.4-1

Although part of the Proposed Action would involve an average of 3,040 annual military helicopter operations (about 10% of total operations) of various types, the total contribution of these helicopters in terms of DNL was considered negligible. If all helicopters were assumed to operate on the same flight track at an altitude of 500 feet, the total DNL directly below the flight track would be about 60 dB (Appendix H).

Noise levels on major roads in the vicinity of the base were also analyzed. Traffic data used to project future noise levels were derived from information presented in the traffic analysis in Section 4.2.3. Traffic data used in this analysis are presented in Appendix H.

4.4.4.1 Proposed Action

The results of the aircraft noise modeling for the Proposed Action are presented as noise contours in Figures 4.4-2 through 4.4-4. The approximate number of acres and estimated population within each DNL range for each of the modeled years are presented in Table 4.4-12. Compared to the preclosure reference, this represents a decrease of 5,875 acres within DNL 65 dB in 1998, 6,113 acres in 2003, and 6,109 acres in 2013. The maximum exposure is projected for 1998, after which the FAA-required conversion from Stage 2 to quieter Stage 3 aircraft would result in reduced noise exposure even though the number of aircraft operations by Stage 3 aircraft would continue to increase.

Table 4.4-12

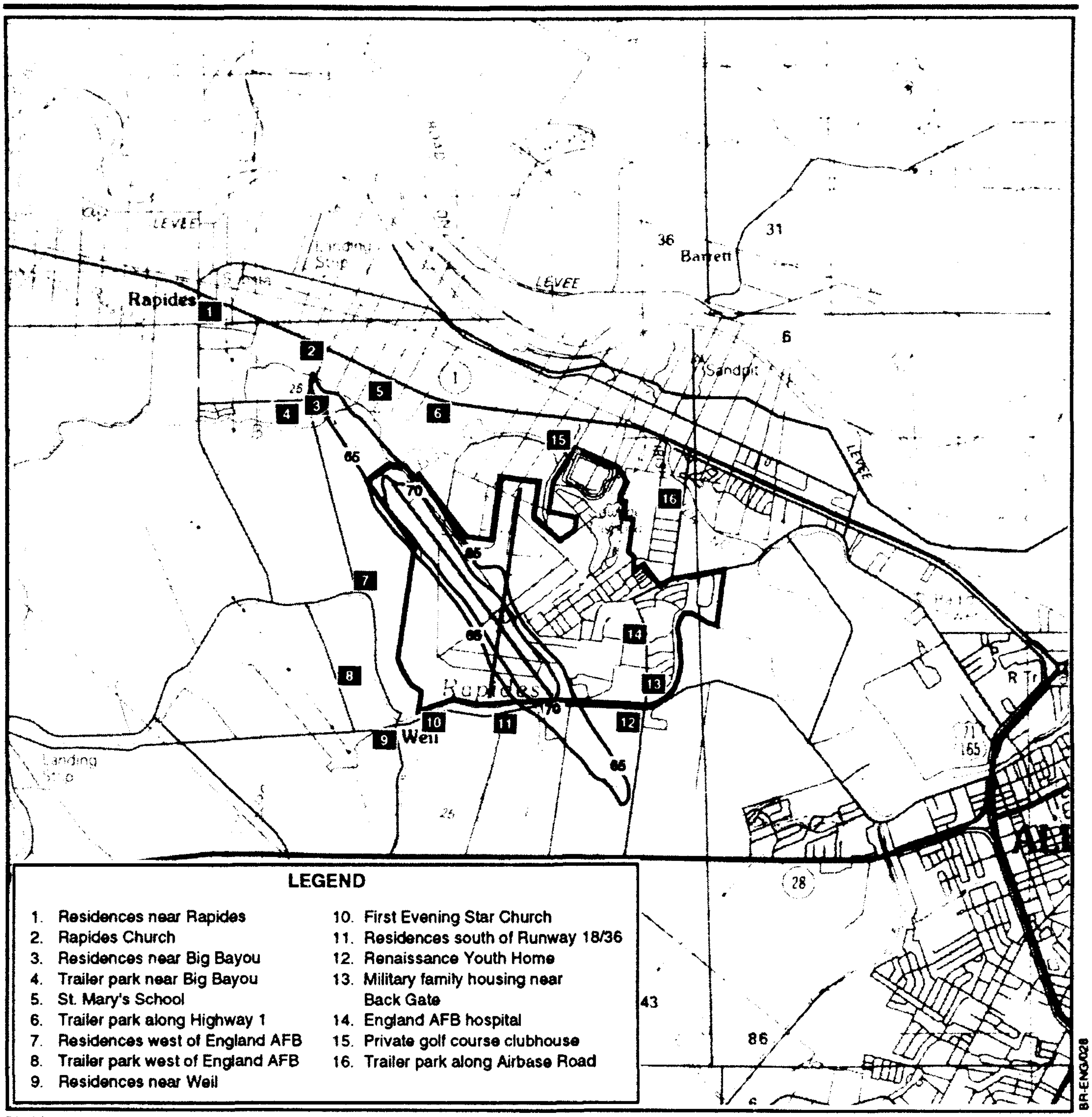
DNL Exposure for the Alternative Reuse Plans (in dB)

		65-70		70-75		>75	
Year	**Alternative**	**Acres**	**Population**	**Acres**	**Population**	**Acres**	**Population**
1998	Proposed Action	518	30*	347	0	0	0
	General Aviation	236	0	194	0	0	0
2003	Proposed Action	372	0	255	0	0	0
	General Aviation	0	0	0	0	0	0
2013	Proposed Action	375	0	256	0	0	0
	General Aviation	0	0	0	0	0	0

Note: *Residences near Big Bayou (Receptor 3).

DNL and SEL values were calculated for representative locations in the vicinity of the airfield for the noisiest and most common jet aircraft. A comparison of total DNL (dB) values at each of these receptors is presented in Table 4.4-13.

In terms of predicted DNL values for the representative receptor locations, for modeled year 1998, all receptors would experience DNLs less than 65 dB except for some residences adjacent to Big Bayou (Receptor 3), which would



EXPLANATION

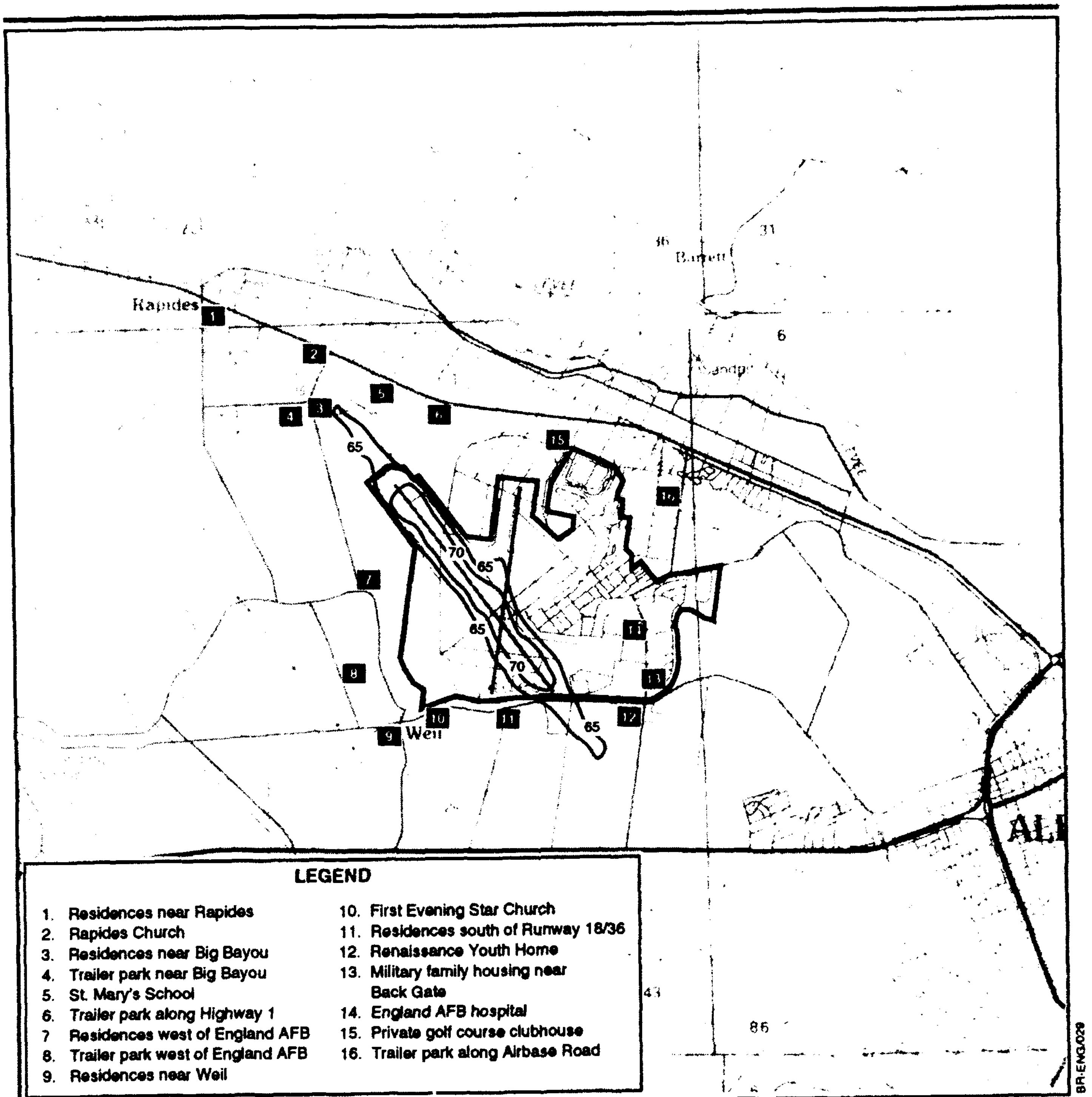
—— Base Boundary

—65— DNL Noise Contours (in 5dB Intervals)

0 ¼ ½ 1 MILES

DNL Noise Contours-Proposed Action (1998)

Figure 4.4-2



EXPLANATION

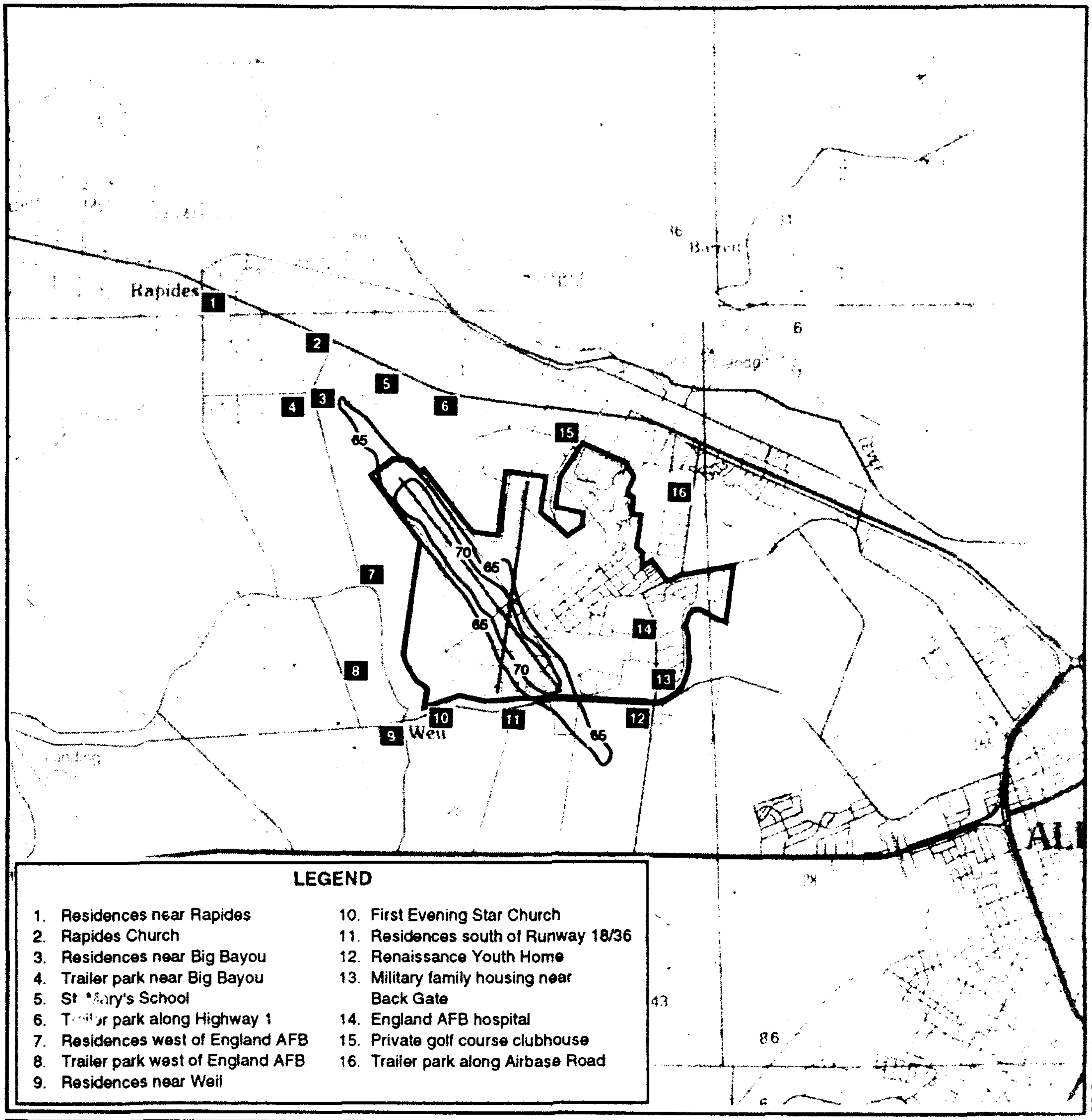
——— Base Boundary

—65— DNL Noise Contours (in 5dB Intervals)

0 ¼ ½ 1 MILES

DNL Noise Contours-Proposed Action (2003)

Figure 4.4-3



EXPLANATION

Base Boundary

—65— DNL Noise Contours (in 5dB Intervals)

0 ¼ ½ 1 MILES

DNL Noise Contours-Proposed Action (2013)

Figure 4.4-4

Table 4.4-13

Comparison of Total DNL (dB) at Representative Noise Receptors

No.	Receptor	1998 Proposed Action	1998 General Aviation Alternative	2003 Proposed Action	2003 General Aviation Alternative	2013 Proposed Action	2013 General Aviation Alternative
1	Residences near Rapides	56	54	52	*	52	*
2	Rapides Church	63	60	60	50	60	50
3	Residences near Big Bayou	65	61	62	51	62	51
4	Trailer park near Big Bayou	57	55	53	*	53	*
5	St. Mary's School	56	54	52	*	52	*
6	Trailer park along Highway 1	54	51	51	*	51	*
7	Residences west of England AFB	*	*	*	*	*	*
8	Trailer park west of England AFB	*	*	*	*	*	*
9	Residences near Weil	*	*	*	*	*	*
10	First Evening Star Church	52	*	52	*	52	*
11	Residences south of Runway 18/36	59	54	59	*	59	*
12	Renaissance Youth Home	57	55	53	*	53	*
13	Military family housing near Back Gate	51	*	*	*	*	*
14	England AFB Hospital	*	*	*	*	*	*
15	Private golf course clubhouse	51	*	51	*	51	*
16	Trailer park along Airbase Road	*	*	*	*	*	*

Note: *Predicted DNL is below 50 dB; model accuracy is uncertain below 50 dB.

be exposed to DNL 65 dB. In 2003 and 2013, all receptors would experience DNLs less than 65 dB.

Predicted SELs at the representative noise receptors for the aircraft considered in this analysis are presented in Table 4.4-14. The analysis suggests that, for the Proposed Action, some aircraft overflights could affect the sleep of some residents in the area. The identified land uses associated with potential sleep disturbance include trailer parks and residential areas, a youth home, and the base hospital (Receptors 1, 3, 4, 6-9, 11-14, and 16).

Based on Lukas (1975) worst-case sleep disturbance curve (Figure H-4 in Appendix H) and the SELs by night-flying aircraft in Table 4-4-14, it is estimated that 15 to 50 percent of the population of these areas might be disturbed during nighttime sleep by a single aircraft event in 1998. In 2003 and 2013, it is estimated that 15 to 35 percent of the population of these areas might be disturbed during nighttime sleep by a single aircraft event. The average reduction in noise level, in terms of SEL, at the receptors between the B-727-200 (Stage 2) and MD-82 (Stage 3) aircraft would be about 13 dB.
The noisiest civilian aircraft were determined from estimates of A-weighted maximum sound levels (L_{max}) as presented in FAA Advisory Circular 36-3F (U.S. Department of Transportation, Federal Aviation Administration 1990a) (Table 4.4-15). These estimates are based on a reference receptor being 4 miles from the start of an aircraft's takeoff roll and approximately 1.25 miles from the runway threshold on approach.

The most common jets proposed for 1998 are the B-727-200 and MD-82, with approximately 1.5 and 4.5 average daily operations, respectively. These two aircraft have maximum noise levels at the two reference locations of about 89 dBA and 85 dBA, respectively. In the years 2003 and 2013, the MD-82 would be the most common jet with six average daily operations. The next most common jet for any of the modeled years would be the B-747-200 and C-5A, with 0.66 and 0.68 average daily operations, respectively. The military C-5A is not listed in the FAA Advisory Circular 36-3F (U.S. Department of Transportation, Federal Aviation Administration 1990a), but its maximum noise level is probably higher than the B-747-200, which has a maximum noise level of approximately 100 dBA (Table 4.4-15).

General aviation and air taxi aircraft comprise a majority of the average daily operations. Their combined total average daily operations range from about 55 in the year 1998 to about 74 in the year 2013. Maximum noise levels for these aircraft range from 63 dBA to approximately 82 dBA at the reference distances.

Surface traffic sound levels for several road segments are presented in Table 4.4-16. These levels are presented in terms of DNL as a function of distance from the centerline of the roadways analyzed. No residences along these roadways would be exposed to noise levels of DNL 65 dB or greater due to surface traffic for any of the modeled years.

Table 4.4-14

Predicted Sound Exposure Levels at Representative Noise Receptors

No.	Receptor	C-5A	B-727	C-141	B-747	MD-82	C-130	Beach Baron 58P	BA J-31	SF340/ EMB-120	Cessna Conquest II	Cessna Citation I	Comsep
		Highest SEL (dB) for Aircraft Type											
1	Residences near Rapides	105	102	98	91	85	87	80	78	72	71	78	75
2	Rapides Church	113	107	104	98	90	94	85	86	79	76	82	81
3	Residences near Big Bayou	115	109	106	101	92	96	86	88	82	79	84	83
4	Trailer park near Big Bayou	106	102	98	90	87	87	81	79	73	72	79	75
5	St. Mary's School	105	102	100	88	87	86	86	79	74	78	78	81
6	Trailer park along Highway 1	101	97	96	82	84	82	87	77	73	79	74	81
7	Residences west of England AFB	98	88	92	-	79	77	80	75	70	74	69	73
8	Trailer park west of England AFB	90	79	-	-	68	73	84	69	63	77	62	77
9	Residences near Weil	91	82	-	-	72	79	82	76	72	75	72	75
10	First Evening Star Church	96	88	--	--	78	88	82	83	80	74	80	76
11	Residences south of Runway 18/36	106	99	100	-	88	96	89	86	87	79	87	83
12	Renaissance Youth Home	105	101	100	87	87	86	80	79	74	71	77	73
13	Military family housing near Back Gate	99	96	94	80	82	81	75	76	70	67	72	67
14	England AFB Hospital	96	89	91	-	79	76	71	73	68	63	68	63
15	Private golf course clubhouse	88	80	-	-	69	89	84	82	81	75	81	77
16	Trailer park along Airbase Road	82	75	-	-	63	72	66	69	63	58	62	58

Table 4.4-15

Maximum Noise Levels (L_{max}, dBA) Along Flight Path of Proposed Civilian Aircraft Types

Aircraft Type/Engine	Takeoff[1]	Approach[2]
Boeing 747-200/JT9DFL[3]	100.5	97.2
Boeing 727-200/JT8D-15QN	88.9	89.0
McDonnell Douglas MD-80/JT8D-217A[4]	83.7	85.0
Cessna Citation I/JT15D-1A	67.3	77.7
British Aerospace Jetstream 31/TPE331-10U-501H	63.7	74.7
Beech Baron 58P/TSIO-520WB	66.0	77.0
Saab SF-340/GE CT7-5A2	65.3	80.0
Embraer EMB-120/PW115	63.2	81.8
Cessna Conquest II/TPE-331-9	63.0	76.5

Notes: [1]Distance of 4 miles from start of takeoff roll.
[2]Distance of 1.25 miles from the runway threshold.
[3]Maximums are highest for all B-747-200/JT9D engine types listed.
[4]Maximums are highest for all MD-80/JT8D-217A engine types listed.

Source: U.S. Department of Transportation, Federal Aviation Administration 1990a.

Table 4.4-16

Distance to DNL From Roadway Centerline - Proposed Action

Year	Roadway	Distance (ft) DNL 65 dB	Distance (ft) DNL 70 dB	Distance (ft) DNL 75 dB
1998	State Highway 1-East of Airbase Road	55	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	58	14	*
	State Highway 496-East of Vandenberg Drive	39	18	*
	State Highway 498-East of Airbase Road	46	21	*
2003	State Highway 1-East of Airbase Road	57	13	*
	State Highway 28-West of Vandenberg Drive	22	*	*
	State Highway 28-East of Vandenberg Drive	61	15	*
	State Highway 496-East of Vandenberg Drive	42	20	*
	State Highway 498-East of Airbase Road	49	23	*
2013	State Highway 1-East of Airbase Road	57	13	*
	State Highway 28-West of Vandenberg Drive	22	*	*
	State Highway 28-East of Vandenberg Drive	63	16	*
	State Highway 496-East of Vandenberg Drive	45	21	*
	State Highway 498-East of Airbase Road	53	24	*

Note: *Contained within the roadway.

Mitigation Measures. Potential mitigation measures for reducing effects from aircraft noise would be to adhere to the FAA land use guidelines presented in Table 3.4-7 (Chapter 3.0). No mitigation measures would be required for surface traffic noise.

4.4.4.2 General Aviation Alternative

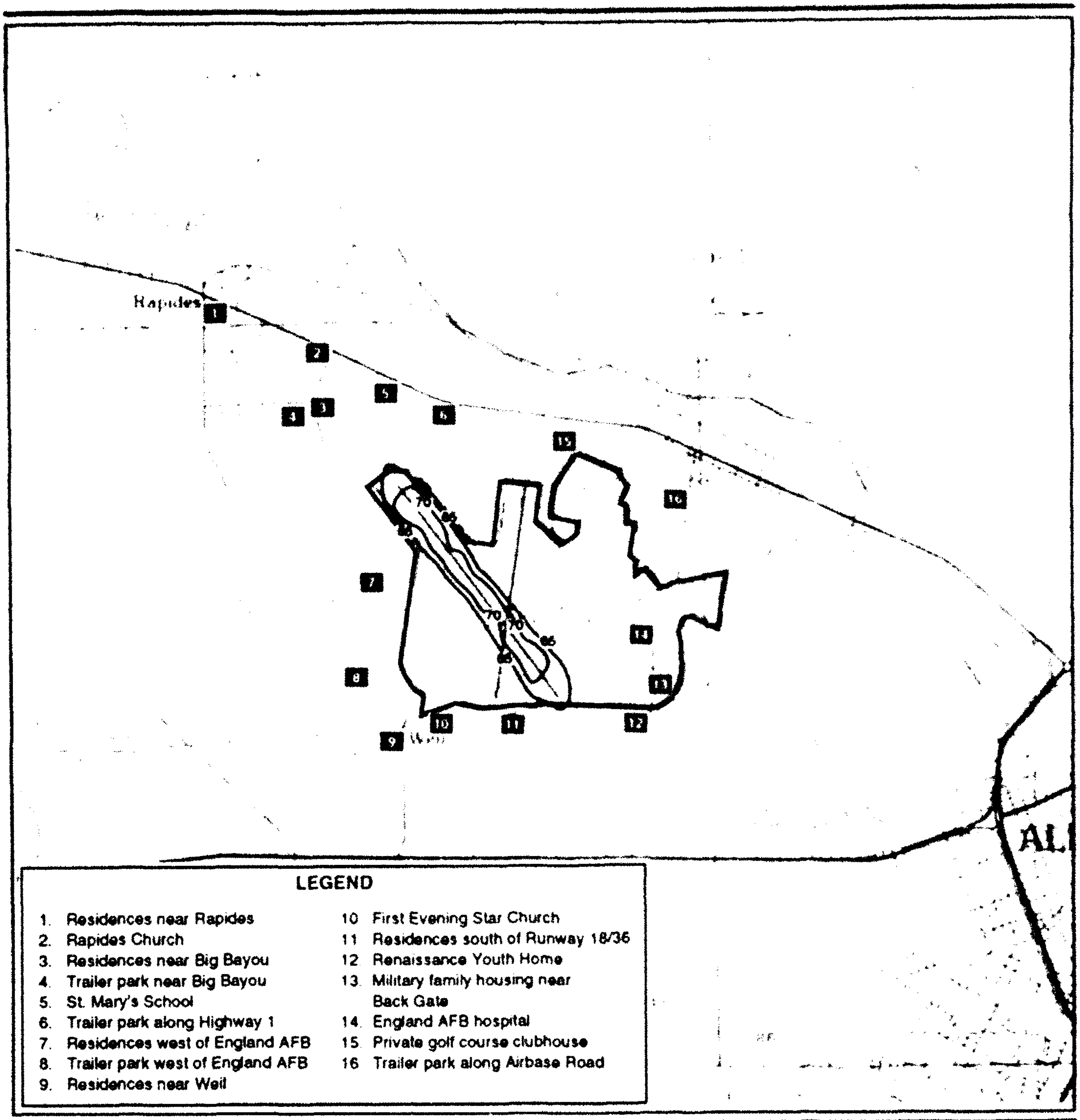
The results of the aircraft noise model for the General Aviation Alternative for 1998 are presented as noise contours in Figure 4.4-5. The noise model predicted that the DNL 65 dB contour would be confined to the immediate runway area in 2003 and 2013, resulting primarily from use of Stage 3 and general aviation aircraft. Therefore, no DNL contours are shown for these cases.

The approximate number of acres and estimated population within each DNL range for each of the study years are presented in Table 4.4-12. Compared with the Proposed Action, this alternative represents a decrease of 282 acres within DNL 65 dB in 1998, 372 acres in 2003, and 375 acres in 2013. Compared with the preclosure reference, this represents a decrease of 6,310 acres within DNL 65 dB in 1998 and 6,740 acres in 2003 and 2013. The maximum exposure is projected for 1998, after which the FAA-required transition from Stage 2 to quieter Stage 3 aircraft would result in reduced noise exposure even though the number of aircraft operations by Stage 3 aircraft would continue to increase.

Calculated DNL values at representative locations in the vicinity of the airfield are presented in Table 4.4-13. For this alternative, DNL values resulting from aircraft operations are predicted to be less than DNL 65 dB for all receptors in all modeled years. Compared to the Proposed Action, DNL values at the representative locations were lower, on average, by 3 dB in 1998 and 9 dB in 2003 and 2013.

Predicted SELs at the representative noise receptors for the aircraft considered in this analysis are presented in Table 4.4-14, but only noise levels for air cargo and general aviation aircraft types would apply for this alternative. The analysis suggests that, for this alternative, some aircraft overflights could affect the sleep of some residents in the area. The identified land uses associated with potential sleep disturbance would be the same as for the Proposed Action.

The estimated percentage of people who might be disturbed during nighttime sleep due to this alternative in any of the modeled years would also be the same as for the Proposed Action, because the range of SEL by the contributing aircraft at the applicable receptors is approximately the same as for the Proposed Action.



EXPLANATION

Base Boundary

—65— DNL Noise Contours (in 5 dB Intervals)

0 ¼ ½ 1 MILES

DNL Noise Contours-General Aviation Alternative (1998)

Figure 4.4-5

The discussion of maximum aircraft noise levels in Section 4.4.4.1 would also apply for this alternative, except this alternative only considers the air cargo and general aviation aircraft types.

Surface traffic sound levels for several road segments are presented in Table 4.4-17. These levels are presented in terms of DNL as a function of distance from the centerline of the roadways analyzed. No residences along these roadways would be exposed to noise levels of DNL 65 dB or greater due to surface traffic for any of the modeled years.

Table 4.4-17

Distance to DNL From Roadway Centerline - General Aviation Alternative

Year	Roadway	Distance (ft) DNL 65 dB	Distance (ft) DNL 70 dB	Distance (ft) DNL 75 dB
1998	State Highway 1-East of Airbase Road	46	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	57	14	*
	State Highway 496-East of Vandenberg Drive	38	17	*
	State Highway 498-East of Airbase Road	45	21	*
2003	State Highway 1-East of Airbase Road	56	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	59	14	*
	State Highway 496-East of Vandenberg Drive	40	19	*
	State Highway 498-East of Airbase Road	47	22	*
2013	State Highway 1-East of Airbase Road	57	14	*
	State Highway 28-West of Vandenberg Drive	24	*	*
	State Highway 28-East of Vandenberg Drive	61	15	*
	State Highway 496-East of Vandenberg Drive	50	23	*
	State Highway 498-East of Airbase Road	42	20	*

Note: *Contained within the roadway.

Mitigation Measures. No mitigation measures would be required for this alternative.

4.4.4.3 Business/Technology Center Alternative

No aircraft operations would occur with the Business/Technology Center Alternative. Surface traffic sound levels for several road segments are presented in Table 4.4-18. These levels are presented in terms of DNL as a function of distance from the centerline of the roadways analyzed. No residences along these roadways would be exposed to noise levels of DNL 65 dB or greater due to surface traffic for any of the modeled years.

Mitigation Measures. Noise mitigation measures would not be required with the Business/Technology Center Alternative because no adverse effects are associated with this alternative.

Table 4.4-18

Distance to DNL From Roadway Centerline
Business/Technology Center Alternative

Year	Roadway	Distance (ft) DNL 65 dB	Distance (ft) DNL 70 dB	Distance (ft) DNL 75 dB
1998	State Highway 1-East of Airbase Road	56	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	58	14	*
	State Highway 496-East of Vandenberg Drive	38	17	*
	State Highway 498-East of Airbase Road	45	21	*
2003	State Highway 1-East of Airbase Road	56	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	59	15	*
	State Highway 496-East of Vandenberg Drive	41	19	*
	State Highway 498-East of Airbase Road	49	22	*
2013	State Highway 1-East of Airbase Road	57	14	*
	State Highway 28-West of Vandenberg Drive	22	*	*
	State Highway 28-East of Vandenberg Drive	62	16	*
	State Highway 496-East of Vandenberg Drive	43	20	*
	State Highway 498-East of Airbase Road	51	24	*

Note: *Contained within the roadway.

4.4.4.4 Recreation/Tourism Alternative

No aircraft operations would occur with the Recreation/Tourism Alternative. Surface traffic sound levels for several road segments are presented in Table 4.4-19. These levels are presented in terms of DNL as a function of distance from the centerline of the roadways analyzed. No residences along these roadways would be exposed to noise levels of DNL 65 dB or greater due to surface traffic for any of the modeled years.

Mitigation Measures. Noise mitigation measures would not be required with the Recreation/Tourism Alternative because no adverse effects are associated with this alternative.

4.4.4.5 No-Action Alternative

There would be no airport activity and minimal surface traffic with the No-Action Alternative.

Mitigation Measures. Noise mitigation measures would not be required with the No-Action Alternative because no adverse effects are associated with this alternative.

Table 4.4-19

Distance to DNL From Roadway Centerline Recreation/Tourism Alternative

Year	Roadway	Distance (ft) DNL 65 dB	Distance (ft) DNL 70 dB	Distance (ft) DNL 75 dB
1998	State Highway 1-East of Airbase Road	56	13	*
	State Highway 28-West of Vandenberg Drive	20	*	*
	State Highway 28-East of Vandenberg Drive	56	13	*
	State Highway 496-East of Vandenberg Drive	38	17	*
	State Highway 498-East of Airbase Road	44	20	*
2003	State Highway 1-East of Airbase Road	56	13	*
	State Highway 28-West of Vandenberg Drive	21	*	*
	State Highway 28-East of Vandenberg Drive	59	15	*
	State Highway 496-East of Vandenberg Drive	41	19	*
	State Highway 498-East of Airbase Road	47	22	*
2013	State Highway 1-East of Airbase Road	57	14	*
	State Highway 28-West of Vandenberg Drive	22	*	*
	State Highway 28-East of Vandenberg Drive	61	15	*
	State Highway 496-East of Vandenberg Drive	43	20	*
	State Highway 498-East of Airbase Road	51	24	*

Note: *Contained within the roadway.

4.4.5 Biological Resources

The Proposed Action and alternatives (except the No-Action Alternative) could potentially affect biological resources through alteration or loss of vegetation and wildlife habitat. These impacts are described below for each alternative.

Sufficient land exists for proposed facilities on the base to avoid sensitive biological resources (e.g., jurisdictional wetlands, bottomland forest). Assuming these areas are avoided, impacts to biological resources would not be significant.

Assumptions used in analyzing the effects of the Proposed Action and alternatives include the following:

- Staging and other areas temporarily disturbed by construction would be placed in previously disturbed areas (e.g., paved or cleared areas) to the extent possible.

- The proportion of disturbance associated with each land use category were determined based on accepted land use planning concepts. Development in each area could occur at one or more locations unless designated as vacant land.

4.4.5.1 Proposed Action

Construction and operations activities of the Proposed Action would adversely affect biological resources primarily through permanent loss of vegetation and its associated wildlife. Additional adverse effects are associated with conversion of habitats (e.g., conversion of immature forest, shrubland, and hay cropping areas to frequently mowed weedy areas).

Vegetation. Potential disturbance areas (i.e., areas where construction would likely occur) for the Proposed Action would consist of a maximum of 390 acres (Table 4.4-20). Of the 390 acres, 70 acres are native vegetation (50 acres of immature bottomland forest and 20 acres of shrub thicket); 270 acres are weedy or ruderal vegetation with a low biological value in hay cropping, improved/semi-improved, and depression areas; and 50 acres are recently disturbed vegetation areas, such as landfill, perimeter fencerow, and drainage canal sites.

Table 4.4-20

Vegetation Types in Potential Disturbance Areas for the Proposed Action

	Acres of Impact			
Habitat	**1993-1998**	**1998-2003**	**2003-2013**	**Total**
Native Vegetation				
Immature Bottomland Forest	50	0	0	50
Shrub Thicket	20	0	0	20
Weedy Vegetation[1]	270	0	0	270
Recently Disturbed[2]	50	0	0	50
TOTAL:	**390**	**0**	**0**	**390**

Notes: [1]Includes vegetation in hay cropping areas, improved/semi-improved areas, and depressions.
[2]Includes vegetation in landfill areas, perimeter fencerows, and drainage canals.

The loss of approximately 160 acres of vegetation and habitat would result from development of the proposed JRTC ISB facilities in the southwest and central portions of the base, expansion of the golf course in the southeast portion of the base, and construction of industrial facilities in the northeast portion of the base. Depending on the siting of various facilities, up to 70 acres of native vegetation and 90 to 160 acres of already disturbed vegetation could be disturbed.

The greatest potential impacts to native vegetation would occur in the immature bottomland forest and shrub thicket along the western/southwestern boundary of the base. This native vegetation, in the area that could be used for ISB facilities and activities, is the most biologically valuable area to potentially be affected. The remainder of the land in the area proposed for ISB facilities and activities is currently outleased for hay cropping. With the Proposed Action, these areas would be mowed frequently, resulting in lower structural diversity and a decrease in biodiversity. Sufficient land exists in the potential disturbance areas to allow the ISB facilities to be sited to avoid the immature bottomland forest and shrub thicket areas. Use of this area for ISB facilities and activities would then disturb only approximately 110 acres of weedy vegetation. Impacts to the mature bottomland forest east of the sewage treatment pond are discussed under sensitive habitats.

A minimal maintenance plan would be implemented in areas not proposed for new development, including lawn mowing in residential and base operations areas, and hay cropping in areas near the runways. Plant communities and vegetation types on and adjacent to the base would remain relatively the same with the Proposed Action. Areas that are not maintained and/or used may be allowed to undergo natural plant succession, thereby enhancing habitat types and biodiversity over time. With little or no disturbance, such areas would revert to a natural forest habitat typical for the region.

Wildlife.

Habitat Alteration and Loss. The majority of impacts to wildlife are expected to be long term and include loss and/or fragmentation of habitat, displacement, increased stress, disruption of daily/seasonal behavior, and mortality for less mobile species. The ability of mobile species to displace and survive in adjacent habitats would depend primarily on the presence or absence of suitable habitat and, if present, whether or not adjacent suitable habitats are at carrying capacity. If adjacent habitats are at carrying capacity at the time of construction/onset of operations, the forced introduction of individuals into these areas would cause an increase in competition for resources (food, nesting areas, etc.) which, in turn, would cause a temporary increase in mortality for some species until equilibrium is reestablished.

Most important among potential impacts to wildlife resulting from the Proposed Action would be the loss of native vegetation/habitat in the southwest portion of the base and the loss of potential raptor foraging habitat. Impacts to species potentially affected by the loss of native vegetation in this area include direct mortality or displacement for species with relatively small home ranges, such as eastern cottontails (*Sylvilagus floridanus*), plains pocket gophers (*Geomys busarius*), marsh rice rats (*Oryzomys palustris*), northern cardinals (*Cardinalis cardinalis*), and green anoles (*Anolis carolinensis*). This loss of native habitat may also affect carnivores such as coyotes (*Canis latrans*) and gray foxes (*Urocyon cinereoargenteus*).

However, the majority of native vegetation is along the base boundary and much of it would likely be retained as a buffer. In addition, the amount of native vegetation potentially lost is relatively small, and this loss is not expected to have a significant impact on regional populations of affected wildlife. Loss of raptor foraging habitat in the form of some of the hay cropping areas and landfill areas, which support a variety of rodents, would affect the foraging habits of species such as red-tailed (*Buteo jamaicensis*) and red-shouldered hawks (*B. lineatus*), kestrels (*Falco sparverius*), and marsh hawks (*Circus cyaneus*). However, adjacent foraging habitat is available, and this relatively small loss of habitat is not expected to have a significant impact on regional populations of these species.

In addition, with the Proposed Action, the existing natural areas on and adjacent to the base (other than the area in the southwest portion of the base discussed above) are expected to continue to mature, thereby providing habitat for different/additional wildlife species over time.

Noise/Activity. Overall, the Proposed Action would result in a substantial reduction in the amount of human activity on the base. This would be generally beneficial to wildlife species in the vicinity. Because many species avoid areas of intense human activity, the Proposed Action could result in a slight increase in the use of the base by wildlife species. However, human activity, and especially helicopter and aircraft activity, would have a detrimental impact on wildlife on and adjacent to these areas of the base.

Threatened and Endangered Species. The Air Force has conducted informal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) for potential land disposal to private parties. The USFWS indicates that it is unlikely that any federally listed threatened, endangered, or candidate species are present on England AFB due to the lack of appropriate habitat (U.S. Fish and Wildlife Service 1992). Several listed species do occur within a 50-mile radius of the base (Chapter 3.0, Table 3.4-9). These include the endangered red-cockaded woodpecker (*Picoides borealis*) and the endangered Louisiana pearlshell mussel (*Margaritifera hembeli*), which are known to occur on Claiborne Range. However, Claiborne Range is not part of this disposal action. Reuses associated with the Proposed Action are not related to continuing Air Force use of the range.

No plant or animal species listed as threatened, endangered, or sensitive by the USFWS was detected on the base during the February 1992 survey. It is unlikely, therefore, that the Proposed Action would have any significant negative impacts on any of these species.

If any portion of England AFB is transferred to another federal agency and is subsequently found to contain any of the species listed in Table 3.4-9, that agency may be required to conduct additional consultation under Section 7 of the Endangered Species Act prior to irreversible or irretrievable commitment of resources to any project that could adversely affect these species. Formal consultation under Section 7 of the Endangered Species Act is required if the federal agency determines that its action may affect listed species or critical habitat or if formal consultation is requested by the Director of the USFWS.

Formal consultation is a process between the USFWS and the federal agency that concludes with the USFWS's issuance of a biological opinion that states whether or not the federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

A no-jeopardy opinion may include restrictions on the amount of incidental adverse effects to listed species and critical habitat. A USFWS opinion that the project could jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat, known as a jeopardy opinion, would also include reasonable and prudent alternatives, if any, that the federal agency could implement to avoid jeopardizing the listed species or critical habitat. If a jeopardy opinion is issued, the federal agency will either alter or cease its action to comply with the no-jeopardy mandate in Section 7(a)(2) of the Endangered Species Act or seek an exemption from this mandate under Section 7(h) of the Act.

For properties conveyed to nonfederal and private parties, those parties would be subject to the prohibitions listed in Section 9 of the Endangered Species Act (16 U.S.C. 1538) and 50 CFR 17, Subparts C, D, F, and G. For certain activities involving the export, possession, taking, sale, or transport of threatened or endangered animal species, nonfederal and private parties would be required to obtain a permit under Section 10 of the Endangered Species Act (16 U.S.C. 1539) and 50 CFR 17, Subparts C and D.

Sensitive Habitats. Sensitive habitats associated with England AFB include wetlands (Figure 3.4-6) and mature bottomland forest.

Wetlands. Wetland areas on and adjacent to England AFB, according to the National Wetlands Inventory (NWI) map provided by the USFWS, include Big Bayou, Bayou Rapides (including Le Tig Bayou), and several smaller wetland areas. Based on a jurisdictional determination made by the U.S. Army Corps of Engineers (COE) and valid until October 1993, only Big Bayou and Bayou Rapides (including Le Tig Bayou) are subject to Section 404 of the Clean Water Act (Chapter 3.0, Figure 3.4-6). The Proposed Action would have no significant negative impact on these wetlands.

Filling of wetland areas totaling less than 10 acres does not generally require an individual COE permit because this activity is covered by the existing authorization of a nationwide permit. Filling of a wetland between 1 and 10 acres requires prior notification of the COE, whereas filling of a wetland under 1 acre does not. However, notification of the COE is recommended even in those cases where filling of less than 1 acre is anticipated.

It is unlikely that the smaller wet areas would be adversely affected by the Proposed Action because they are either off the base (to the north of the runways), in an area to be left vacant (sewage treatment pond), or impacts will be minimized in areas directly adjacent to wet areas (e.g., areas near the western boundary of the base).

Mature Bottomland Forest. The area to the east of the sewage treatment pond is one of the better preserved examples of near-climax bottomland hardwood forest in a largely agricultural region. It would not be adversely affected by the Proposed Action because it is in an area to be left vacant.

Mitigation Measures. The following procedures and guidelines have been identified as potential mitigation measures which project proponents should use to protect and restore biological resources disturbed by project activity:

- Avoid known sensitive or unique biological habitats to the extent possible. For the Proposed Action, this would include leaving as much of the forest and shrubland in the southwest portion of the base intact as possible.
- Revegetate temporarily disturbed sites with native species and use native species in landscaping to the greatest extent possible.
- Implement measures to promote soil stabilization.
- Implement measures to control noxious weed invasion on disturbed sites.
- Operate construction equipment on roads or within designated disturbance areas.
- Where practical, decrease mowing frequency and the clearing of vegetation from some drainage channels. This will increase biodiversity, improve wildlife habitat, and aid the establishment of aquatic vegetation which will substantially improve water quality in drainage channels.
- Maintain pesticide and fertilizer management plans. This is important to prevent contamination of surface and groundwater. In addition, uncontrolled pesticide use (especially rodent poisons and other pest control measures common at golf courses) often has direct impacts on native rodents in the vicinity and indirect impacts on raptors and carnivorous mammals, which may feed on poisoned rodents.
- Although the only identified jurisdictional wetlands, Big Bayou and Bayou Rapides (including Le Tig Bayou on the base golf course) are not expected to be affected by the Proposed Action, modifications to existing reuse plans could indirectly affect wetlands. These wetlands would be protected in compliance with Executive Order 11990 and Section 404 of

the Clean Water Act. Mitigations could include (1) avoidance of direct and indirect disturbance of wetlands through facility design or appropriate restrictions in the transfer of documents; (2) onsite (if possible) replacement of any wetlands lost at a ratio determined through consultation with USFWS, COE, and EPA; (3) re-creation of wetland habitat elsewhere on the site of purchase and fencing of any offsite replacement habitat; and (4) monitoring (until habitat becomes well established) of any replacement wetlands required to determine the effectiveness of replacement and any remedial measures necessary. Avoiding disturbance to these jurisdictional wetlands as well as nonjurisdictional wet areas identified on the NWI map could include controlling runoff from construction sites into drainages through use of berms, silt curtains, straw bales, and other appropriate techniques. Equipment could be washed in areas where washwater could be contained and treated or evaporated.

Use of standard construction practices and implementation of these mitigation measures should maintain impacts to biological resources below levels of significance.

4.4.5.2 General Aviation Alternative

Construction activities associated with the General Aviation Alternative would disturb small areas of relatively low biological value. Specific impacts are described below.

Vegetation. The General Aviation Alternative would have impacts on base vegetation similar to those of the Proposed Action. By 1998, a total of approximately 386 acres would be affected (50 acres of immature bottomland forest, 20 acres of shrub thicket, 266 acres of weedy vegetation, and 50 acres of recently disturbed vegetation) (Table 4.4-21). Between 1998 and 2013, vegetation on the base would not be significantly affected. Impacts to the mature bottomland forest east of the sewage treatment pond are discussed under sensitive habitats.

Wildlife.

Habitat Alteration/Loss. Impacts to wildlife with the General Aviation Alternative are expected to be similar to those of the Proposed Action. Conversion of the weedy hay cropping areas to planted croplands would decrease its value to wildlife. In addition, loss of the immature bottomland forest and shrub thicket would result in increased wildlife mortality and displacement. However, these impacts are not expected to be significant to regional wildlife populations. With this alternative, the existing natural areas are expected to continue to mature, providing habitat for different/additional wildlife species.

Table 4.4-21

Vegetation Types in Potential Disturbance Areas for the General Aviation Alternative

Habitat	Acres of Impact 1993-1998	1998-2003	2003-2013	Total
Native Vegetation				
Immature bottomland forest	50	0	0	50
Shrub thicket	20	0	0	20
Weedy Vegetation[1]	266	0	0	266
Recently Disturbed[2]	50	0	0	50
TOTAL:	**386**	**0**	**0**	**386**

Notes: [1]Includes vegetation in hay cropping areas, improved/semi-improved areas, and depressions.
[2]Includes vegetation in landfill areas, perimeter fencerows, and drainage canals.

Noise/Activity. The General Aviation Alternative would result in a substantial reduction in the amount of human activity on the base. Because many wildlife species avoid areas of intense human activity, the reduction in human activity associated with this alternative is expected to result in an increase in wildlife species diversity and density on the base.

Threatened and Endangered Species. The General Aviation Alternative is not expected to result in adverse impacts to any threatened or endangered species (Section 4.4.5.1).

Sensitive Habitats. The impacts to sensitive habitats resulting from this alternative would be the same as described for the Proposed Action, except for the transitional wet area on the western boundary of the base, which would not be affected with this alternative. The mature bottomland forest east of the sewage treatment pond would not be affected with this alternative because it is in an area to be left vacant.

Mitigation Measures. This alternative would require the disturbance of only a small amount of land of relatively little biological value. However, biological resource impacts could be reduced further through implementation of mitigation measures described in Section 4.4.5.1.

4.4.5.3 Business/Technology Center Alternative

Construction and operations activities associated with the Business/Technology Center Alternative would adversely affect biological resources primarily through permanent loss of vegetation and its associated wildlife. Additional adverse effects are associated with conversion of habitats (e.g., conversion of immature forest, shrubland, and hay cropping areas to frequently mowed weedy areas).

Vegetation. The Business/Technology Center Alternative would directly affect a total of approximately 985 acres of vegetation on the base -- 590 acres by 1998, and an additional 395 acres by 2003. Additional disturbance between 2003 and 2013 is not projected (Table 4.4-22). Of the 590 acres affected by 1998, 540 acres of weedy vegetation and 50 acres of recently disturbed vegetation type would be affected. No native vegetation would be affected in this phase of development. By 2003, approximately 395 additional acres would be developed: 70 acres of native vegetation, 260 acres of weedy vegetation, and 65 acres of recently disturbed vegetation. Through 2013, total affected vegetation (985 acres) would involve 70 acres of native vegetation, 800 acres of weedy vegetation, and 115 acres of recently disturbed vegetation. The 70 acres of native vegetation affected include approximately 50 acres of immature bottomland forest and approximately 20 acres of shrub thicket along the western/southwestern boundary of the base. The native vegetation is considered to be the most valuable vegetation/habitat type potentially affected by this alternative. Impacts to the mature bottomland forest east of the sewage treatment pond are discussed under sensitive habitats.

Table 4.4-22

Vegetation Types in Potential Disturbance Areas for the Business/Technology Center Alternative

	Acres of Impact			
Habitat	**1993-1998**	**1998-2003**	**2003-2013**	**Total**
Native Vegetation				
Immature Bottomland Forest	0	50	0	50
Shrub Thicket	0	20	0	20
Weedy Vegetation[1]	540	260	0	800
Recently Disturbed[2]	50	65	0	115
TOTAL:	**590**	**395**	**0**	**985**

Notes: [1]Includes vegetation in hay cropping areas, improved/semi-improved areas, and depressions.
[2]Includes vegetation in landfill areas, perimeter fencerows, and drainage canals.

Wildlife.

Habitat Alteration/Loss. Impacts to wildlife utilizing the base resulting from the Business/Technology Center Alternative are expected to be similar to those discussed for the Proposed Action (displacement, habitat loss, increased stress, disruption of daily/seasonal behavior, and mortality for less mobile species). The aquaculture area proposed with this alternative could require the conversion of the native vegetation in the southwest portion of base, but a buffer of this vegetation could be left near the perimeter fence. Other natural areas on and adjacent to the base are expected to continue to mature, providing habitat for additional/different wildlife species over time.

The major impact to wildlife resulting from this alternative would be the loss of potential raptor foraging habitat in the areas around the airfield. Conversion of the current hay cropping outlease areas to planted croplands and nurseries will lower their value to raptors. Beneficial impacts to wildlife from this alternative include the additional habitat which the aquaculture area would provide for waterfowl, shorebirds, herpetofauna, and invertebrates. Because of the suitable habitat available off the base for displaced wildlife species and the wildlife habitat which would be created, this alternative is not expected to result in significant adverse impacts on wildlife.

Noise/Activity. The Business/Technology Center Alternative would result in substantially less noise around the airfield because aircraft activity would cease. This would be generally beneficial to wildlife in the vicinity, and the increased activity in the fields around the airfield associated with agriculture, nursery, and aquaculture operations is not expected to result in significant adverse impacts on wildlife in the region.

Threatened and Endangered Species. This alternative is not expected to result in adverse impacts to any threatened or endangered species (see threatened and endangered species discussion, Section 4.4.5.1).

Sensitive Habitats. Impacts to sensitive habitats resulting from the Business/Technology Center Alternative would be the same as described for the Proposed Action, except for the transitional wet area on the western boundary of the base, which may experience adverse impacts if used as an aquaculture area. However, this area is not considered a jurisdictional wetland (Section 4.4.5.1) and no significant adverse impacts to jurisdictional wetland areas are expected. The mature bottomland forest east of the sewage treatment pond would not be affected by this alternative because it is in an area to be left vacant.

Mitigation Measures. The natural areas, including the immature bottomland forest and shrub thicket in the southwest portion of the base, should be avoided to the maximum extent possible. Other measures to minimize impacts are discussed in Section 4.4.5.1.

4.4.5.4 Recreation/Tourism Alternative

Construction and operation activities associated with the Recreation/Tourism Alternative would adversely affect biological resources primarily through permanent loss of vegetation and its associated wildlife. Additional adverse effects would be associated with conversion of habitats (e.g., conversion of immature forest, shrubland, and hay cropping areas to frequently mowed weedy areas).

Vegetation. Overall, the Recreation/Tourism Alternative would directly affect a total of approximately 980 acres of vegetation on the base -- 320 acres by 1998, 410 acres between 1998 and 2003, and 250 acres between 2003 and 2013 (Table 4.4-23).

Table 4.4-23

Vegetation Types in Potential Disturbance Areas for the Recreation/Tourism Alternative

	Acres of Impact			
Habitat	**1993-1998**	**1998-2003**	**2003-2013**	**Total**
Native Vegetation				
Immature Bottomland Forest	0	15	20	35
Shrub Thicket	0	0	30	30
Weedy Vegetation[1]	270	330	200	800
Previously Disturbed[2]	50	65	0	115
TOTAL:	**320**	**410**	**250**	**980**

Notes: [1]Includes vegetation in hay cropping areas, improved/semi-improved areas, and depressions.
[2]Includes vegetation in landfill areas, perimeter fencerows, and drainage canals.

Of the 320 acres affected by 1998, 270 acres are weedy vegetation and 50 acres are recently disturbed vegetation. No native vegetation would be affected during this phase of development. By 2003, approximately 410 additional acres would be developed: 15 acres of native vegetation, 330 acres of weedy vegetation, and 65 acres of recently disturbed vegetation. Between 2003 and 2013, 250 additional acres would be developed: 50 acres of native vegetation and 200 acres of weedy vegetation. Through 2013, affected vegetation types would involve a total of 980 acres: 65 acres of native vegetation, 800 acres of weedy vegetation, and 115 acres of recently disturbed vegetation. The 65 acres of native vegetation affected includes 35 acres of immature bottomland forest and 30 acres of shrub thicket along the western/southwestern boundary of the base, considered to be the most valuable vegetation/habitat type potentially affected. Impacts to the mature bottomland forest east of the sewage treatment pond are discussed under sensitive habitats.

Wildlife.

__Habitat Alteration/Loss__. The Recreation/Tourism Alternative would require the conversion of the largest amount of potential wildlife habitat compared to the other alternatives. Many land uses (e.g., outdoor performance area and water park/theme park) proposed for the airfield with this alternative would not provide suitable habitat for native wildlife species. The proposed golf course expansion, planted croplands, and nurseries would provide habitat for some wildlife, but would not support the prey base for raptors which the current weedy hay cropping outlease areas do. However, additional foraging habitat does exist in the vicinity, and displacement, habitat loss, ecological stress, and the temporary increase in mortality resulting from this alternative are not expected to have a significant adverse impact on regional wildlife populations. With the possible exception of the area in the southwest portion of the base, the natural areas on and adjacent to the base are expected to continue to mature with this alternative, providing habitat for additional wildlife species over time.

__Noise/Activity__. Cessation of aircraft activities with the Recreation/Tourism Alternative would have a beneficial effect on wildlife in the vicinity of the base. The increase in human activity in areas such as the proposed theme park, outdoor performance area, and expanded golf course, would result in avoidance of these areas by some wildlife species. However, these impacts would not be considered significant.

Threatened and Endangered Species. This alternative is not expected to result in adverse impacts to any threatened or endangered species (Section 4.4.5.1).

Sensitive Habitats. The impacts to sensitive habitats resulting from this alternative would be the same as described for the Proposed Action. The transitional wet area on the western boundary of the base would be within the area proposed for development of the golf course. The mature bottomland forest east of the sewage treatment pond would not be affected with this alternative because it is in an area to be left vacant.

Mitigation Measures. The natural areas on the base, especially the immature bottomland forest, shrub thicket, and transitional wetland in the southwest portion of the base, should be avoided to the maximum extent possible. Other measures to minimize impacts are discussed in Section 4.4.5.1.

4.4.5.5 No-Action Alternative

Maintenance of the base under the OL would have beneficial effects on biological resources. A reduction in human activity and a cessation of aircraft flights would reduce disturbance (particularly by noise) to wildlife on and in the vicinity of the base. Habitat quality for wildlife could improve if mowing of nonlandscaped areas were terminated. This would be most notable in the western portion of the base where old hay production areas have begun to revert to native vegetation. With the No-Action Alternative, these areas would mature as would the vegetation in and around the sloughs and in the forested areas on and in the vicinity of the base.

4.4.6 Cultural and Paleontological Resources

Potential impacts were assessed by (1) identifying types and possible locations of reuse activities that could directly or indirectly affect cultural resources, (2) identifying the nature and potential significance of cultural resources in potentially affected areas, and (3) classifying potential effects as significant, insignificant, or beneficial.

4.4.6.1 Proposed Action

No National Register of Historic Places (NRHP)-eligible prehistoric sites or historic standing structures have been identified at England AFB (Louisiana State Historic Preservation Office 1992). No scientifically important paleontological resources are expected to occur. It is unlikely that any buried deposits associated with Oak Isle Plantation are NRHP-eligible because such remains have probably lost physical integrity due to extensive Air Force construction activities in the vicinity of the Oak Isle Plantation area over the 40-year period of the base's existence. There is a possibility that NRHP-eligible historic sites associated with the McNutt Plantation may occur at England AFB (Tetra Tech, Inc. 1992; D. Rivet, personal communication, 1992). Construction of aviation support facilities in the extreme southwestern portion of the base may affect potentially NRHP-eligible historic sites associated with the McNutt Plantation. However, aviation support facilities may be located in such a way as to avoid NRHP-eligible sites associated with the McNutt Plantation.

Mitigation Measures. The Air Force will consult with the Louisiana State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation on mitigation measures which may include a Memorandum of Agreement to protect any cultural resources determined to be significant by the Air Force in consultation with the SHPO.

4.4.6.2 General Aviation Alternative

Impacts to cultural resources resulting from the General Aviation Alternative would be the same as those described for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.6.3 Business/Technology Center Alternative

Impacts to cultural resources resulting from the Business/Technology Center Alternative would be the same as those described for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.6.4 Recreation/Tourism Alternative

Impacts to cultural resources resulting from the Recreation/Tourism Alternative would be the same as those described for the Proposed Action.

Mitigation Measures. Mitigation measures would be the same as those described for the Proposed Action.

4.4.6.5 No-Action Alternative

The Louisiana SHPO has concurred with a finding that no NRHP-eligible prehistoric or historic resources occur on England AFB. However, historic archaeological resources associated with the antebellum and postbellum periods may occur. Because no ground-disturbing activities would occur with the No-Action Alternative, there would be no adverse effect on cultural resources.

4.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF RELOCATING AIRCRAFT OPERATIONS FROM ESLER FIELD TO ENGLAND AFB

The Proposed Action assumes relocation of aircraft operations from Alexandria Esler Regional Airport to England AFB. With England AFB serving as a regional airport, the Alexandria metropolitan area may not be able to support a second regional airport at the existing Esler Airport site.

The impacts of relocating aircraft operations from Alexandria Esler Airport are not described in detail in this EIS. No definite plans for the closure and reuse of Esler have been developed by the England Authority or any other local agency. Therefore, it is assumed that at Esler, some very limited amount of civil aviation may occur or that the airport would remain in caretaker status until a final decision by the local community and the FAA is made concerning the future reuse of Esler. The impacts of relocating aircraft operations at Esler Airport are outlined below. Impacts are described for the same resource categories as discussed in this EIS for the Proposed Action and alternatives.

Community Setting. Employment and population changes are described for Rapides Parish and the communities of Alexandria and Pineville. There would be no change in employment or population because the loss of jobs at Esler Airport would be compensated by the gain in jobs at England AFB, both located within Rapides Parish.

Land Use. With the relocation of aircraft operations from Esler Airport, approximately 2,300 acres of land would be available for reuse.

Transportation. Traffic on roads leading to Esler Airport, particularly State Highway 116, would be reduced substantially (currently estimated at 600 trips per day). This traffic would be shifted to roads leading to England AFB. Traffic on Main Street in Pineville, which connects the City of Alexandria with Esler Airport, would be substantially reduced. The diversion of traffic from the existing airport to England AFB has been factored into the estimated vehicle trips generated by the Proposed Action.

No regional air transportation impacts would result from the transfer of aircraft operations from Esler Airfield to England AFB. Based on historic and projected enplanements at Esler Field, and the reduction in military and civilian personnel associated with the closure of England AFB and the realignment at Fort Polk, the number of enplanements would be less than current levels.

Utilities. Utility demands for water, wastewater, solid waste, electricity, and natural gas at the Esler Airport site would be shifted to England AFB. Because the same agencies provide utilities to the two sites, there would be no net impact on the capacity of the agencies to provide needed services. The capacity of individual solid waste disposal facilities serving the two sites would be affected by the change in location of the regional airport. The relocation of aircraft operations from the existing airport to England AFB has been factored into the utility projections generated in this chapter for the Proposed Action.

Hazardous Materials and Hazardous Waste Management. Hazardous materials used and waste generated at the Esler Airport site would be eliminated with the relocation of aircraft operations from Esler Airport to England AFB. Types of hazardous materials use and waste were factored into the hazardous materials and waste projections found in this chapter for the Proposed Action. There are no known contaminated sites at Esler Airport.

Soils and Geology. Relocation of aircraft operations from Esler Airport to England AFB would not affect the soils and geology of the site. Some soil disturbance may occur as a result of potential reuse activities.

Water Resources. There would be no impact on surface or groundwater resources as a result of the relocation of aircraft operations from Esler Airport. The potential for contamination of water from airport-related activities or accidental spills at Esler Airport would be eliminated.

Air Quality. Pollutant emissions from aviation activities and traffic to and from the airport would be eliminated with the relocation of aircraft operations from Esler to England AFB. However, corresponding increases within the same air basin would occur as a result of the relocation of aircraft operations from Esler Airport to England AFB. Air quality impacts shown in this EIS represent a conservative presentation of air quality impacts in that reductions from the relocation of aircraft operations from Esler Airport to England AFB have not been accounted for in depicting the increase in pollutant emissions from activities at England AFB. Even the conservative assumptions described do not result in the violation of the federal or state standards.

Noise. With the relocation of aircraft operations from Esler Airport, noise generated by airport-related activities would be eliminated. Noise reduction would also occur on roads leading to the airport, particularly State Highway 116.

Biological Resources. Relocation of aircraft operations from Esler Airport would not adversely affect biological resources on or in the vicinity of the site. Reduced noise levels may benefit some wildlife species.

Cultural and Paleontological Resources. Relocation of aircraft operations from Esler Airport would not adversely affect cultural and paleontological resources on or in the vicinity of the site.

CHAPTER 5.0
CONSULTATION AND COORDINATION

5.0 CONSULTATION AND COORDINATION

The federal, state, and local agencies and private agencies/organizations that were contacted during the course of preparing this Environmental Impact Statement are listed below.

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Department of the Air Force, England Air Force Base, Louisiana

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23 CES/DEMU [Entomology] (Doyle Jennings)

23 CES/DEV [Environmental Branch] (Vincent Laborde, Chief; Capt. Frank Duncan; Mark Zill)

23 TFW/DOTS [Airspace Management] (Jerry Hilton)

23 TFW HOSP/SGPB [Bioenvironmental Engineering] (Lt. Peter Breed)

23 TFW/PA [Public Affairs] (Capt. Keith Tackett)

Department of the Army, Fort Polk, Louisiana

5th ID(M)/DEH [Engineering and Housing] (Dr. Charles Stagg, Stephen Parris)

5th ID(M)/PAO [Public Affairs] (Maj. James Whorton)

Department of the Army, Headquarters Forces Command (Karen Nolan), Atlanta, Georgia

Department of Defense, Office of the Actuary (Pam Samuels), Arlington, Virginia

Department of Justice, Bureau of Prisons (Deborah Hood), Washington, DC

Department of the Interior, Fish and Wildlife Service, Region 4, Atlanta, Georgia

Environmental Protection Agency, National Data Branch (Thomas E. Link), Research Triangle Park, North Carolina

STATE AGENCIES

Louisiana Department of Culture, Recreation, and Tourism, Office of Cultural Development (W. Edwin Martin, Jr.; Duke Rivet)

Louisiana Department of Environmental Quality, Air Quality and Nuclear Energy Division (M. Sak), Baton Rouge

Louisiana Department of Wildlife and Fisheries, Baton Rouge

LOCAL AND REGIONAL AGENCIES

City of Alexandria

Office of the City Clerk (Jon Grafton)

Electric Distribution Department (Bobby Delong)

Electric Production Department (Bo Connella)

Management Information Systems (James W. Koonce, Director)

Planning Department (Dennis Story, Director; Jimmie Lewis)

Sanitation Department *(Don Hair, Superintendent)*

Utility Division (A. E. "Sonny" Craig, Director)

Wastewater Department (Ann Wilson, Grant Magnon)

Water Department (Chuck M. Miller, Superintendent)

City of Pineville

Office of the Mayor (Fred Baden)

Engineering Department (Tom David, Sr.)

Sewer Treatment Plant

England Economic and Industrial Development District (James L. Meyer, Chairman)

Rapides Parish

Administrator (Jack DeWitt)

Alexandria Esler Regional Airport (Jerry Thiels, Airport Manager)

Rapides Area Planning Commission (Brent Dix, Assistant Director; Keith Sayer, Transportation Planner)

OTHER ORGANIZATIONS AND INDIVIDUALS

Central Louisiana Chamber of Commerce (Elton C. Pody, Executive Vice President)

Central Louisiana Electric Company (Garland Lawrence, Terry Spruill, Owen Fallon)

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6.0 LIST OF PREPARERS AND CONTRIBUTORS

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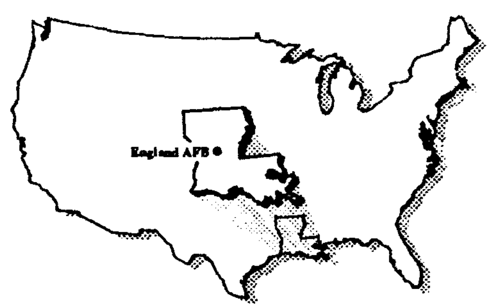

CHAPTER 9.0
PUBLIC COMMENTS AND RESPONSES

9.0 PUBLIC COMMENTS AND RESPONSES

9.1 INTRODUCTION

The Air Force has complied with the National Environmental Policy Act (NEPA) mandate of public participation in the Environmental Impact Analysis Process primarily in two ways:

- The Draft Environmental Impact Statement (DEIS) was made available for public review and comment in July 1992.
- A public hearing was held in Alexandria, Louisiana, on August 11, 1992. The Air Force presented the findings of the DEIS for disposal and reuse of England Air Force Base (AFB), Louisiana, and invited public comments.

Public comments received both verbally at the public meeting and in writing during the public comment period have been reviewed and are responded to in this section.

9.2 ORGANIZATION

This chapter is organized into the following sections:

- An index of commentors;
- Responses to individual comments;
- A transcript of the public hearing; and
- Written comments received at the public hearing or through the mail.

During the public comment and review period, comments on the DEIS were received from government agencies and officials, as well as the general public. The comments included verbal and written statements submitted at the public hearing and letters and statements received through the mail. A total of 10 documents (comment letters and statements, including the public hearing transcript) were received by the close of the public comment period. Because of the small number of comments received, responses have been provided for each comment.

Within each of the 10 documents, each comment and response are numbered sequentially. For example, comment number 1.3 refers to comment 3 in document 1. A reader who wishes to read the specific comment(s) received may turn to the photocopies of the documents included in this section.

Effects on the physical or natural environment that may result from projected changes in certain socioeconomic factors that are associated with or caused by the disposal or reuse of the base are addressed in this EIS. Other socioeconomic issues, such as the region's employment base, school budgets, municipal/state tax revenues, municipal land planning, medical care for military retirees and dependents, local governments and services, real estate, and economic effects on utility systems and specific businesses, are beyond the scope of NEPA and Council on Environmental Quality (CEQ) requirements. Analysis of impacts associated with these issues is provided in the Socioeconomic Impact Analysis Study (SIAS) (U.S. Air Force 1992e); that public document also supports the base reuse decision-making process.

The environmental impact analyses presented in this EIS are based on the results of the socioeconomic analyses described in detail in the SIAS. All comments pertaining solely to issues addressed in the SIAS were considered beyond the scope of this EIS, and are not addressed in this comment and response chapter. However, those comments have been reviewed and responses have been provided to the commentors. Comments related to socioeconomic factors that are addressed in this EIS (e.g., population and employment) have been included in this comment and response chapter.

Table 9-1 includes the names of the commentors, the document numbers that have been assigned to each document, and the page number on which the photocopy of the document is presented.

Table 9-1

Index of Commentors

Document No.	Author		Page No.
1.	Public Hearing Transcript		9-11
	Speaker #1	Monique Coco (representing U.S. Senator John Breaux)	9-45
	Speaker #2	James L. Meyer, Chairman, England Economic and Industrial Development District	9-45
	Speaker #3	Harold R. Smith, Chairman, Retired Military Committee	9-48
	Speaker #4	Donald Maltby	9-50
	Speaker #5	Jerry Thiels, Airport Manager, Alexandria Esler Regional Airport	9-53
2.	Statement of U.S. Senators J. Bennett Johnston and John Breaux and U.S. Congressman Clyde Holloway		9-56
3.	I.J. Ramsbottom, Environmental Clearance Officer, U.S. Department of Housing and Urban Development, Region VI		9-58
4.	Edward G. Randolph, Jr., Mayor, City of Alexandria		9-59
5.	Kenneth W. Holt, M.S.E.H., U.S. Department of Health and Human Services, Center for Disease Control, National Center for Environmental Health		9-69
6.	B.J. Wynne, Regional Administrator, U.S. Environmental Protection Agency, Region 6		9-70
7.	James L. Meyer, Chairman, England Economic and Industrial Development District		9-73
8.	Sister Rachel Smith, New St. Mark Missionary Baptist Church		9-83
9.	Vincent Pizzolato, Environmental Engineer, State of Louisiana Department of Transportation and Development		9-84
10.	Glenn B. Sekavec, Acting Regional Environmental Officer, U.S. Department of the Interior, Office of Environmental Affairs		9-86

Responses to Individual Comments

1.1 **Comment.** We feel that the emphasis needs to be placed a little bit heavier on the retirement community center alternative.

Response. NEPA and CEQ regulations require that all alternatives discussed in the EIS receive the same level of analysis as the Proposed Action. In accordance with these regulations, the Air Force has placed equal emphasis on all reuse alternatives analyzed in the EIS.

Each of the reuse alternatives provides recreational, medical, and other amenities that will serve retirees in the area.

1.2 **Comment.** There were a lot of charts on the increase in population in the area due to redevelopment of England AFB. We know that there was nothing addressed as to those retired military and other retirees who might be inclined to move to the area, because of the closure of England AFB.

Response. With closure of the base, the military hospital will also close. It is unlikely that a substantial number of military retirees will choose Alexandria as their residence in the absence of the hospital and BX facilities. The population increase shown under the various reuse alternatives is the Air Force's best estimate based on economic modeling and historical data from other bases.

1.3 **Comment.** The local officials involved in negotiating the transfer of the base to the local authorities should keep the public informed of the negotiations through local papers and television.

Response. The Air Force is responsible for keeping the Governor and the England Authority informed. The England Authority, as the local agency, is working with the community and keeping the community informed of what is happening with regard to disposal and reuse of England AFB.

1.4 **Comment.** On Page 4-76 of the DEIS, you show a dual runway use for all aviation alternatives. But the day-night sound level (DNL) noise contours are shown for only one runway, 14/32. DNL contours for the other runway, 18/36, should also be shown in the FEIS (Mr. Jerry Thiels).

Response. The DNL noise levels obtained for Runway 18/36 were less than 65 decibels (dB). Noise levels less than 65 dB were not depicted with contours.

The lower noise levels on Runway 18/36 are primarily a result of the assumption that this runway would be used principally by small general aviation aircraft. These aircraft produce less noise than the larger aircraft which would use Runway 14/32.

Another factor which tends to reduce the DNL noise levels is related to the method of calculating the DNL value. The DNL value is obtained by averaging the noise levels over a 24-hour period, with a 10-dB penalty for nighttime noise. Thus, if few nighttime flights occur, as in the case of Runway 18/36, the calculated DNL value will be considerably lower than the single-event noise exposure levels produced by an aircraft during takeoffs and landings.

The details of the assumed flight operations used in the noise model are shown in Appendix H, Tables H-5a through H-5c, and H-9a through H-9c.

2.1 **Comment.** We urge the Department of Defense (DOD) and the Air Force to continue to assist the community by transferring directly to the England Economic and Industrial Development District all real and non-mission related personal property from the base.

Response. Comment noted. After completion and consideration of this EIS, the Air Force will prepare decision documents stating what property is excess and surplus, and the terms and conditions under which the dispositions will be made.

3.1 **Comment.** The U.S. Department of Housing and Urban Development (HUD) has made a determination that closure of the base will not affect any HUD projects in Alexandria, Pineville, or Rapides Parish, Louisiana.

Response. Comment noted.

4.1 **Comment.** The Draft EIS does not address the mitigation concerns of the City of Alexandria. . . The document fails to address the socioeconomic impacts of closure, at least with respect to the reimbursement of capital monies. . . The city asks that the Record of Decision specifically deal with each of the mitigation concerns identified in the May 14, 1991, testimony of Mr. James L. Meyer.

Response. The issue addressed in this comment is beyond the scope of the EIS and is not required by NEPA. This EIS discusses the potential environmental impacts associated with the disposal and reuse of England AFB.

5.1 **Comment.** We have reviewed the DEIS for potential adverse impacts on human health . . . We believe issues related to public health have been adequately addressed.

Response. Comment noted.

6.1 **Comment.** The Final EIS should discuss the applicability of the stormwater regulations to the disposal and reuse alternatives and any necessary permitting requirements.

Response. Text in Chapter 4.0, Section 4.2.4, has been added stating that property recipients who operate any of the following four categories of municipal or industrial stormwater discharges will have to obtain discharge permits from the Environmental Protection Agency (EPA) under the National Pollutant Discharge Elimination System (NPDES). The four categories are (1) discharges which have NPDES permits issued as of February 1987; (2) discharges associated with industrial activity; (3) discharges from a municipal separate storm sewer system serving a population of 100,000 or more; and (4) other discharges that contribute to a violation of a water quality standard or significantly add pollutants to waters of the United States. If a facility has zero stormwater discharge due to discharges to a detention pond only, then a permit would not be required so long as it is not anticipated that the detention pond could overflow.

The EPA has proposed three potential options for applying for a stormwater permit: (1) Notice of Intent (NOI) to be regulated under a general permit, (2) individual permit applications, or (3) group permit applications. Procedures for applying for a general permit are found in 40 CFR 122.28. Procedures for applying for an individual permit are found in 40 CFR 122.21. Construction permits are required for construction activities that result in the disturbance of 5 or more acres of land. Procedures for applying for group permits are found in 40 CFR 122.26.

6.2 **Comment.** EPA has launched a significant initiative to incorporate pollution prevention throughout all federal-sector activities. Describe DOD pollution prevention and waste minimization policies and practices for the Proposed Action in the FEIS.

Response. Because the actual reuse activities will not be a DOD undertaking, DOD's pollution prevention and waste minimization policies and practices would not be required. However, applicable mitigation measures sections in the EIS have been revised to suggest that reusers implement pollution prevention and waste minimization strategies that have been recommended by the EPA in its *Guides to Pollution Prevention* series of publications and *Waste Minimization Opportunity Assessment Manual.*

6.3 **Comment.** The Draft EIS does not explain the present need for closing the Alexandria Esler Airport. Also, the generalized environmental impacts of closing the airport should be included in the FEIS.

Response. The England Authority's *Preliminary Base Reuse Plan,* issued in March 1992, indicates that the location of England Air Force

Base (AFB) in proximity to downtown Pineville/Alexandria, to other local population and business centers and future access to the interstate highway system (Interstate 49), and an existing 9,350-foot runway with a potential to expand to 10,500 feet, provides some advantages over the Alexandria Esler Regional Airport. However, a decision on whether to close Alexandria Esler Airport has not been made. The England Authority has commissioned a consulting firm to conduct a feasibility study to determine whether to shift aviation activity from Esler to England and the appropriate timing of any shift in activity. Chapter 4.0 includes a brief summary analysis of the environmental consequences of relocating aircraft operations from Esler Airport. If a decision to close Esler Airport is made in the future, the results should improve environmental conditions in the vicinity due to the reduction in traffic, aircraft operations, maintenance activities, and materials/fuel handling; and the reduction in water and energy consumption, and wastewater and refuse production.

6.4 **Comment.** A number of mitigation measures are identified in the DEIS; however, there are no assurances that these measures will be implemented once a final reuse option is selected. Some type of agreement or stipulation may be necessary with reuse recipients to ensure that all mitigation measures and subsequent monitoring identified in the DEIS are carried out.

Response. The Air Force agrees that certain stipulations, as required by applicable laws and regulations, may be necessary to ensure enforcement of certain mitigations. Examples of such stipulations may include covenants to protect historic resources eligible for listing on the National Register of Historic Places and restrictions on certain reuse activities that could interfere with the Air Force's efforts to remediate a contaminated site.

Many aspects of the future reuse of the disposed property will be regulated by federal, state, and local regulatory agencies when the reusers develop detailed plans on implementation of reuse activities.

7.1 **Comment.** Comments from the England Authority presented at the scoping meeting asked that the contents of the DEIS for the proposed closure of Myrtle Beach AFB be incorporated in the scope of the study for the DEIS for the disposal and reuse of England AFB.

Response. All relevant information pertaining to the 1990 DEIS on the closure of Myrtle Beach AFB was incorporated into the Affected Environment section of the DEIS. The disposal and reuse EIS for England AFB does not deal with the closure issue.

7.2 **Comment.** The Final EIS should identify in detail all hazardous materials/hazardous waste sites and maps of environmentally sensitive areas should be included in the Final EIS.

Response. The Draft and Final EIS does identify all known hazardous materials/hazardous waste sites and provides maps of environmentally sensitive areas as outlined in Chapters 3.0 and 4.0 (reference sections 3.3 and 4.3).

7.3 **Comment**. The DEIS does not specifically discuss the problems associated with metal structures which are coated with lead-based paint... It is requested that the ROD clearly address and encumber the U.S. Government with the future cost of handling this environmentally hazardous material when the paint systems age and have to be replaced.

Response. Federal agencies are not required to remove lead-based paint that does not pose an unacceptable risk of exposure. Consequently, the Air Force will not remove lead-based paint from these structures. Prior to disposal, the Air Force will conduct a survey of all facilities built prior to 1978 to determine whether lead-based paint is present. If present, the recipient of the disposed property will be notified of its possible presence. This notice is similar to the written notification called for in HUD guidelines on real estate transactions. Proper care and management of these structures by reusers of the property will minimize the potential of unacceptable risk attributable to lead paint.

7.4 **Comment**. The DEIS states that "Demolition and renovation of structures with asbestos-containing materials are assumed to be performed by new owners." This statement does not appear to be supported by the Air Force Policy on Management of Asbestos at closing bases... It is requested that the ROD require the asbestos-containing material to be removed prior to transfer of property.

Response. The U.S. Air Force will fully comply with its policy on management of asbestos at closing bases as described in Appendix G of the DEIS. At the time of disposal, all properties will be in compliance with this policy. The statement on Page S-11 refers to those buildings which may be demolished or renovated by the new owners after the disposal process has been completed by the Air Force.

7.5 **Comment**. The ROD should state that all hazardous materials and hazardous wastes placed on England AFB are presently and forever will be the sole responsibility of the U.S. Government.

Response. The Air Force will accomplish any remediation necessary to protect human health or the environment with respect to any hazardous substance remaining on the property before the date of disposal. A covenant in the property conveyance document will contain assurances of this and also provide that the United States will take any additional necessary remedial action after the disposal date to protect human health or the environment resulting from previous Air Force activities.

7.6 **Comment.** The local land use ordinances will remain after base closure.

Response. Comment noted.

7.7 **Comment.** Remedial action should be taken to repair failures and to prevent further deterioration of the stormwater drainage system before transfer of the property.

Response. Caretaker maintenance of property prior to disposal has been arranged by the Air Force base disposal agency to prevent degradation of existing facilities. However, this maintenance is not intended to upgrade or improve existing facilities. The Air Force does not intend to upgrade or improve existing facilities for reuse unless required to do so to comply with environmental remediation responsibilities.

7.8 **Comment.** The Air Force should immediately begin lease negotiations with the England Authority so as to allow and facilitate the development of England Industrial Airpark and Community through the provisions it has under federal law to execute long-term leases.

Response. The Air Force cannot enter into long-term leasing of disposal property prior to publication of a ROD. However, the Air Force encourages interim (short-term) leasing arrangements to assist and foster reuse proposals prior to final property disposal.

8.1 **Comment.** The members of the First St. Mark Church would like to purchase a building to start a day care center.

Response. Please write to the attention of Gene Aefsky, Air Force Base Disposal Agency, Cafritz Building, Room D-170, Pentagon, Washington, DC 20330-1000. He will provide you with any information you may need regarding reuse of surplus Air Force property.

9.1 **Comment.** The basis for the trip generation estimates should be cited in the EIS.

Response. The Institute of Traffic Engineers Trip Generation Report (1991) was consulted in determining the average daily traffic generated by the Proposed Action and alternatives, and is cited in Chapter 7.0, References.

9.2 **Comment.** The following realignments and replacements would improve the traffic circulation in the England AFB vicinity.

1. Realignment of McKitchen Road/Vandenberg Drive at State Highway 28.

2. Extension of Rocket Avenue to Harold Miles Park Road.

3. Replacement of current intersection configuration of Airbase Road and England Drive with a standard "T" intersection configuration.

Response. Comment noted. The property recipients could take necessary actions to improve circulation as the traffic resulting from the potential development of the base demands such improvements.

10.1 **Comment.** The U.S. Department of the Interior finds that this DEIS adequately addresses the interests and concerns of this department.

Response. Comment noted.

UNITED STATES AIR FORCE

PUBLIC HEARING

on the

DRAFT

ENVIRONMENTAL IMPACT STATEMENT

for

DISPOSAL AND REUSE

of

ENGLAND AIR FORCE BASE

August 11, 1992, 7:00 p.m.

LTC STARR: Good evening, ladies and gentlemen, and thank you for coming tonight. Can everyone me?

AUDIENCE RESPONSE: You need to speak a little louder.

LTC STARR: Then I will speak up a little bit. This is the public hearing on the Draft Environmental Impact Statement for the disposal and reuse of England Air Force Base. I am Lieutenant Colonel Starr, and I will be the presiding officer over tonight's meeting.

This hearing is held under the provisions of the National Environmental Policy Act and implementing regulations. The Act requires federal agencies study the potential environmental impacts of certain proposed actions and alternatives, and to consider the findings of those studies in deciding how to proceed.

On October 30th, 1991, a scoping meeting was held here in Alexandria to hear your suggestions concerning what should be covered in the Environmental Impact Statement, or "EIS." Since that meeting, the Air Force has examined the environmental concerns that you raised, as well as others, and prepared the draft EIS that is the subject of tonight's meeting.

The purpose of tonight's hearing is to receive your comments, suggestions and criticisms of the draft EIS. For those of you who haven't had a chance to review the draft

EIS, you may want to read the summary of the major findings of the EIS in the handout available at the door. Those findings will also be discussed by the panel members in their presentations tonight.

Now before introducing the panel members, I will explain to you my role in this hearing: I am a military judge, and I primarily serve as a circuit judge in Air Force court martial cases.

I am not here as an advocate or an expert on the draft EIS, and I have had no connection with its development. I am not here as a legal advisor to the panel members who will discuss these proposals. My purpose is to see that we have a fair, orderly hearing, and that all who wish to be heard have a fair chance to some speak.

Now I will introduce the members of the public hearing panel: On my immediate right is Mr. Gene Aefsky of the Air Force Base Disposal Agency. He will describe the Air Force Base disposal process. To his right is Lieutenant Colonel Gary Baumgartel. Lieutenant Colonel Baumgartel is the Chief of the Environmental Planning Division at the Air Force Center for Environmental Excellence, Brooks Air Force Base, Texas. He will discuss the environmental impact analysis process and summarize the results reported in the draft EIS. To Lieutenant Colonel Baumgartel's right is Mr. Tim Tandy of the Federal Aviation Administration, or FAA.

Mr. Tandy is from the FAA's Southwest Regional Office. Because two of the reuse proposals in the EIS involve some form of airport operations, the FAA will be directly involved in the decision-making process if an airport alternative should be selected. Additionally, the FAA has special expertise to help the Air Force study environmental impacts associated with airport operations. For these reasons, the FAA is a cooperating agency with the Air Force for the preparation of the EIS. Mr. Tandy will try to answer your questions on issues of peculiar to airport operations.

This meeting is intended to provide a continuing public forum for two-way communication about the draft EIS, with a view to improving the overall decision-making process.

You will notice that I said "two-way communication." In the first part of the meeting, our speakers will discuss the details of the actions and anticipated environmental impacts. The second part of the meeting will give you an opportunity to provide information and make statements for the record. This input insures the decision-makers have benefit of your knowledge of the local area and any adverse environmental effects you think may result from the proposed action or alternatives. If you have any questions regarding the environmental impact analysis process or the

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Tonight's hearing is designed to give you an opportunity to comment on the adequacy of the EIS. Keep in mind that the EIS is simply intended to insure that future decision-makers will be fully aware of the environmental impacts associated with the various reuse alternatives before they decide on a course of action. Consequently, comments made unrelated to the Environmental Impact Statement are beyond the scope of this hearing and will not be addressed.

When you came in tonight, you were given an attendance card, and you were asked to indicate on it if you wish to speak tonight. After Mr. Aefsky and Lieutenant Colonel Baumgartel finish with their presentations, we will take a 15-minute recess, which will give us a chance to collect all these cards. After the recess, I will recognize elected officials first. Then I will call on members of the public in random order from the cards that have been turned in. For those who haven't indicated on the card that you want to speak, but wish to speak later, please fill out another card during the recess.

(Slide #2)

If you don't feel like standing up tonight and making a statement, you will have until September 7th of this year to submit a copy of your statement for the Air Force's consideration before publishing the EIS. The Air Force will accept comments after September 7th, but cannot guarantee that late comments will be included in the final EIS. Special sheets are provided in the registration area for your use in providing those comments. The address shown on the slide is also contained in the booklets and comment sheets you received as you entered the Convention Hall. Even if you make comments tonight, you have until September 7th to submit additional written comments to the address shown on the slide and on the bottom of the comment sheets.

Whether a statement is made verbally, or submitted in writing either tonight or later, the statement will have the s e impact and will be considered to the statement same extent.

Don't be hesitant to make a statement tonight. I want to insure that all who wish to speak have a fair chance to be heard. We have a court reporter with us, and that is Mr. Bart New. He will take down, word for word, everything that is said tonight. This record will be become a part of the final EIS. The reporter will be able to make a complete record only if he can hear and understand what you say. With that in mind, please help me enforce the following ground rules tonight:

First: Don't begin speaking until I recognize you; and please address your remarks to the panel members. If you have a written statement, place it in the box at the front of the stage, and you may also read it if you wish wish to read it

Second: Please speak clearly and slowly into the microphone at the podium, starting with your name, address and the capacity in which you appear; that is, public official, designated spokesperson for a group, or a concerned citizen. This will help the court reporter prepare a professional transcript.

Third: Please limit your remarks to approximately five minutes, and please honor any request that I make that you stop speaking. I won't make such a request unless it appears that the length of your comments unreasonably interfere with the fair chance of another person to comment.

And fourth: Please do not speak while another person is speak'ng. Only one person can be recognized at a time.

And finally: Please do not smoke in this room.

One thing is extremely important here. You may have information about environmental concerns unknown to the Air

Force. The Air Force is very interested in knowing and assessing all potential environmental impacts of the proposed action and the alternatives. You have experience that comes from living in the area, so the second part of tonight's communication, the part that flows from you to the panel, is critical. Please don't hesitate to participate in these proceedings.

And now it is my pleasure to introduce Mr. Gene Aefsky, who will describe the Air Force Base disposal process. Mr. Aefsky?

MR. AEFSKY: Thank you very much, Colonel. Can you hear me?

AUDIENCE RESPONSE: No.

MR. AEFSKY: Can you hear me now?

AUDIENCE RESPONSE: Yes.

MR. AEFSKY: My name is Gene Aefsky, and I work for the Air Force Base Disposal Agency, an office created to manage the cleanup and disposal of Air Force Bases closed under the authorities of the two Base Closure and Realignment Laws. In discussing the Air Force's proposed action of disposing of England Air Force Base, I would like to cover four general topics:

(Slide #3)

First is the over few overview slide. Second is the objective used by the Air Force to guide its planning.

Third is disposal considerations we will use to arrive at a decision, and lastly is the Air Force decision itself. That is, what actions the Air Force will take based on the findings in the EIS and other considerations. Next slide.

(Slide #5)

MR. AEPSKY: The Secretary of the Air Force has been delegated the authority to act at the Federal Disposal Agent under the 1988 Base Closure and Realignment Act and the Defense Base Closure and Realignment Act of 1990 to utilize or dispose of the federal property which makes up the Air Force's closing bases. Usually this responsibility rests with the General Services Administration. Despite this change, the traditional statutes for disposal of federal property are still in effect.

The Air Force must adhere to those laws and GSA regulations that are in place at the time of the passage of the closure acts. The Air Force has also issued additional policy and procedures required to implement our delegated authority. Another provision of the 1988 and 1990 Acts require us to consult with the State Governor and heads of local governments for the purpose of considering any plan for the use of such property by the local community concerned. We are meeting this consultation requirement by working with the England Authority and will continue to do so.

Finally, our planning recognizes that the Secretary of the Air Force has full discretion in deciding how the Air Force will dispose of the property.

(Slide #6)

MR. AEFSKY: The Air Force recognizes the significant economic impact closure will have on the local community, and it is the Air Force's goal to complete closures and quickly and efficiently as possible. The Federal Government and the Air Force are committed to assisting communities in their efforts to replace the departing military activities with viable public and private enterprises. We are in the process of developing a comprehensive disposal plan which attempts under current law -- I am sorry -- which attempts to balance the needs of community, the environmental consequences of our disposal decision and the needs of the Air Force.

However, congress has only provided startup capital for implementation of the realignments and closures. Revenues from property sales will be used to offset the funding shortfall.

(Slide #7)

MR. AEFSKY: The disposal of property is accomplished in a three-part planning process which includes: The Air Force's preparation of an Environmental Impact Statement; this statement analyzes the various reasonable disposal and reuse alternatives for the base. Secondly, the community's plan for the future use of the property. And finally, the Air Force's disposal plan which analyzes the various disposal options. The disposal plan plan is based on a thorough real estate analysis of the base and region, results from the Environmental Impact Statement, interest shown by other federal agencies, and input from the community reuse organization.

The EIS process culminates with the issuance of a record of decision, which documents the decisions for the disposal of the real property and specifies what environmental mitigations may be needed to protect human health and the environment as a result of the disposal and reuse decisions selected.

(Slide #8)

MR. AEFSKY: Under current law, other federal agencies and homeless assistance providers must be given priority consideration in the use and acquisition of excess base real property. It is Air Force policy to inform the local community representatives of any expressed interest from federal agencies or homeless assistance providers. We encourage all parties to communicate openly with each other during the disposal planning process.

It should be noted that federal agencies generally work with the community to solicit support for their proposal to acquire property. Moreover, it has been the Air Force's experience that such uses for a portion of the property and facilities can be accommodated within the overall community's planned future uses for the entire base.

In general, the disposal options are: Federal agencies transfers; public benefit conveyance to states or political subdivisions, and eligible non-profit institutions; negotiated sales to public agencies; and competitive sales to the general public. The laws and regulations governing disposal do not estabalish a rigid priority for disposal, but provide the federal disposal agent with the broad discretion necessary to insure that all federal real property interests are disposed of in an efficient and effective manner. Therefore the Secretary of the Air Force will decide on the actual disposal plan. Final disposal decisions will be documented in the record decision.

The last subject I would like to address is that of environmental cleanup. The Air Force is committed to cleaning up all areas contaminated by past Air Force activities and protecting the health and safety of the public and any future owners of England Air Force Base. Cleanup activities are continuing, and additional studies are underway which will fully categorize contamination of all other sites to determine the best means to clean them up.

It should be clear that if contaminated areas are not ready for disposal at the time of closure, the Air Force will retain ownership until the property is cleaned up. With others, we may require easements and rights of entry to permit long-term groundwater monitoring and treatment. Nevertheless, despite the Air Force's commitment to cleaning up all past contaminated areas and protecting the public, we do not expect any cleanup activities to delay the reuse of uncontaminated property at England Air Force Base.

Thank you for the opportunity to speak with you this evening. Now I would like to turn the meeting back to Lieutenant Colonel Starr.

LTC STARR: Thank you, Mr. Aefsky. Now Lieutenant Colonel Gary Baumgartel will address the environmental process. Colonel Baumgartel?

(Slide #9)

LTC BAUMGARTEL: Thank you, Lieutenant Colonel Starr. Good evening, I am Lieutenant Colonel Gary Baumgartel. I am the Environmental Planning Division Chief from the Air Force Center for Environmental Excellence at Brooks Air Force Base in Texas. Our organization is conducting the environmental impact analysis process for the disposal and reuse of the base as well as for the other major installations mandated to close during round II under the Base Closure and Realignment Act.

Tonight I will present the schedule for this environmental impact analysis process and show how the public comment period fits into this schedule. I will also discuss the scope of the study, and the relationship between the Environmental Impact Statement and the socioeconomic study. Last, I will present the results of our analysis by resource category.

This environmental effort was initiated in October of the 1991 with a Notice of Intent to Prepare an Environmental Impact Statement, or what I will refer to as an EIS, for base disposal and reuse.

A scoping meeting was held here in these chambers on October 30th, 1991 to receive public input on the scope of issues to be addressed in the EIS and to identify reuse alternatives and issues related to proper disposal. During the scoping process, our office received input from the public as well as a reuse proposal from the England Authority. England Authority's proposal as well as one of the alternatives developed for study by the Air Force included an aviation component.

Because of the potential for aviation reuse for the base, the Federal Aviation Administration, Southwest Region, was invited, and subsequently agreed to become a cooperating agency in the preparation of the EIS. The Air Force has worked with the Federal Aviation Administration, to include the environmental requirements in the EIS.

After scoping, we collected the necessary data and conducted an environmental analysis. The draft EIS was filed with the United States Environmental Protection Agency on July 17th of this year.

(Slide #10)

LTC BAUMGARTEL: In addition to tonight's hearing, written comments on the draft EIS will continue to be accepted at this address until September 7th, 1992. After the comment period is over, we will evaluate all comments, both written and verbal, and perform additional analysis or change the EIS where necessary. Again, as in the scoping process, equal consideration will be given to all comments, whether they are presented here to tonight or mailed prior to September 7th.

Once the review process is complete, we will produce a final EIS, scheduled for completion in November of this year, and mail it to all those on the original draft EIS distribution list. If you are not on the mailing list, you can request a copy by writing to the same address. The final EIS will include comments received during the public review period and our responses to those comments.

If appropriate, we will group comments into categories and respond accordingly. Depending on the number and diversity of comments or the need to conduct additional analysis, the final EIS may consist of a separate volume as a companion to the draft EIS or be distributed as a cover letter and errata sheets. The document will serve as input for the record of decision, which will document the decision by the Air Force. As you heard from Mr. Aefsky, other studies and consideration of other issues beside those addressed in the EIS will enter into the final disposal decision. We expect to accomplish the record of decision in December of this year.

The draft EIS was prepared to comply with the National Environmental Policy Act and the Council on Environmental Quality Regulations. Efforts were made to reduce needless bulk, write in plain language, focus only on those issues that are clearly related to the environment, and to integrate with other documents required as part of the decision-making process. Reuse alternatives that were developed during the scoping process were individually analyzed to provide an environmental comparison.

This analysis focuses on impact to the natural environment that make occur as a direct result of base disposal and reuse, or indirectly through changes in the community. Resources evaluated are geology and soils, water (both surface and groundwater), air quality, noise, biological resources and cultural resources. Indirect changes to the community that provide measures against which environmental impacts could be analyzed include changes to the local population, land use and aesthetics, transportation and community utility services. In addition, the following issues related to current and future management of hazardous materials and waste are discussed in the document: Hazardous materials management, the Air Force's installation restoration program, pesticides, polychlorinated biphenyls or PCBs, Radon and medical or biohazardous waste management.

If, as a result of our analysis, it was determined that substantial adverse environmental impacts would occur through implementation of a reuse alternative, potential mitigation measures were identified and included in the document.

As I mentioned earlier, this draft EIS focuses on the impacts to the natural environment that would occur, either directly or indirectly, from the disposal and reuse of England Air Force Base. The document address socioeconomic factors where there is a relationship between base disposal and changes to the socioeconomic conditions that would result in impacts to the natural environment. Our organization has recently produced a separate socioeconomic study that is not required under the National environmental Policy Act. It describes in greater detail how disposal and reuse of England Air Force Base may economically affect the surrounding areas.

Specifically, the socioeconomic study addressed the following factors for each of the reuse alternatives: Population, employment, housing, public finance, education, government, police and fire, medical, transportation and utilities. Copies of this document were recently provided to key federal, state and local officials and are available for review at the libraries in the area. This document will be forwarded to the decision-maker for input into the disposal process.

Now I would like to present an overview of the proposed action and alternatives that have been analyzed. Afterwards, I will present a synopsis of the results of our analysis by resources category.

Please note that the title of each alternative is presented to give only a general idea of the action. Each of the alternatives contains numerous activities which may not be included in the title.

(Slides #11 & 12)

LTC BAUMGARTEL: This figure shows the land uses for the proposed action. The focus of the proposed action is the reuse of England Air Force Base as an industrial airpark with a regional airport component. The airport would serve a variety of aviation needs, including private general aviation, scheduled airline passenger service, and air cargo, and air operations associated with the U.S. Army Joint Readiness Training Center, or the JRTC, intermediate staging base, if the base is selectd by the Army as a location for this activity.

Aviation-related land uses are indicated in blue. Industrial land uses are shown in brown, and commercial land uses, including office and retail uses, are shown in red. Associated non-aviation land uses proposed for other portions of the base property include recreation areas shown in green, residential areas shown in yellow, educational areas shown in pink, and medical areas shown in orange. Proposed under the recreation land use is the expansion of the existing nine-hole golf horse to eighteen holes.

(Slide #13)

LTC BAUMGARTEL: Here is a recap of the proposed action. The next one, please.

(Slide #14)

LTC BAUMGARTEL: The focus of this alternative is also on aviation-related reuse of the base property. However, with this alternative, only general aviation and air cargo operations are considered. Once again, the aviation-related land use is shown in blue. Industrial and commercial land uses are shown in brown and red respectively. The industrial areas include both manufacturing and warehousing reuses. The large commercial area at the center of the base is proposed for reuse as an office park and for a regional conference center. This reuse would take advantage of the various lodging, food service and meeting facilities available on the base.

Other associated land uses include recreational areas shown in green; residential areas being shown in yellow; and medical and educational facilities shown in pink and orange. With this alternative, the western portion of the existing air field, shown in dark green, is proposed for agricultural uses.

(Slide #15)

LTC BAUMGARTEL: Here is a recap of the main components of the general aviation alternative.

(Slide #16)

LTC BAUMGARTEL: This figure shows the land uses for the business/technology center alternative. This alternative emphasizes conversion of the base to entirely non-aviation uses developed around the expanded regional conference center concept. The airfield portion of the base would be developed for agricultural uses. There would be no aviation reuses proposed except for retention of the existing Federal Aviation Administration radar facility near the southern boundary of the base.

Industrial and commercial land uses, including the conference center, are shown in brown and red. Residential areas are shown in yellow, medical uses in orange, educational uses in pink. The proposed educational reuse includes a vocatiqnal-technical school. Recreation areas are shown in light green, and again, the agricultural areas are shown in dark green.

(Slide #17)

LTC BAUMGARTEL: Here is a recap of the components of the business/technology center alternative.

(Slide #18)

LTC BAUMGARTEL: This figure shows the second non-aviation alternative that was evaluated. This alternative focuses on redevelopment of the base into a recreation/tourism area for local residents as well as tourists from the surrounding region. Reuses proposed with this alternative include development of additional recreational facilities, including two 18-hole golf couses; a water park/theme park; and an outdoor performance facility. A portion of the existing airfield would also be used for agricultural uses.

This alternative, like the previous two alternatives, includes development of an office park and a regional conference center. Industrial and commercial land uses are again shown in brown and red respectively. Residential, educational and medical land uses are shown in red, yellow and orange respectively. Recreation areas are shown again in light green, and agricultural areas are shown in dark green.

(Slide #18)

LTC BAUMGARTEL: Here is a recap of the components of the recreation/tourism alternative.

(Slide #19)

LTC BAUMGARTEL: As required under the National Environmental Policy Act, a no-action alternative was also evaluated. The no-action alternative would result in the Air Force retaining control of the air base property after closure. The property would be closed and maintained in a condition to prevent deterioration. A base disposal agency operating location would be established to ensure base security and maintain the grounds and physical assets, including the existing utilities and structures.

I would now like to present the results of our analysis that are presented in the draft EIS. The proposed action and all the alternatives were analyzed to the same level of detail. The baseline used was England Air Force Base at closure. The following slides show the comparative impacts among thealternatives, excluding the no-action alternative.

(Slide #20)

LTC BAUMGARTEL: This bar graph shows the increase in employment in the Rapides Parish area due solely to the reuse activities at the base, projected through the year 2013. In addition to the direct jobs generated onsite, a number of indirect secondary jobs would be created throughout the region. These additional jobs would increase regional earnings, income and spending. Employment would be phased over a 20-year development period.

Depending on the alternative followed, reuse activities at the base could result in an additional 2,500 to 3,300 direct and secondary jobs in the area by the year 2013. This increase translates to an increased growth in the local job market by about 4.7 to 6.3 percent by 2013.

(Slide #21)

LTC BAUMGARTEL: Redevelopment activities and job growth in the area are also expected to result in some population immigration into the region. Alexandria and Pineville would be the communities most likely to experience the largest increases in population.

This bar graph shows the increase in population of Rapides Parish resulting from reuse activities at the base projected again through 2013. Depending on the alternative selected, growth resulting from reuse activities would result in a maximum increase of 1.2 percent in the projected population of the parish by the year 2013.

(Slide #22)

LTC BAUMGARTEL: Land uses proposed for the various redevelopment alternatives are generally compatible with land uses currently adjacent on the base. Proposed action in the general aviation alternative are consistent with the recently adopted Alexandria 2010 Future Land Use Plan, which designated reuse of the base for an aviation-related use and industrial and commercial center. Reuses proposed for the existing airfield for the two non-aviation alternatives, although not entirely consistent with the Alexandria 2010 Future Land Use Plan, would be compatible with existing offbase land uses. With the two aviation alternatives, the existing city and parish airfield compatibility land use ordinances would need to be revised to reflect a civilian airfield.

Aesthetically, there would be little change in the appearance of the base. Most of the existing facilities would be retained for reuse.

(Slide #23)

LTC BAUMGARTEL: The redevelopment of England Air Force Base will affect local and regional transportation networks. Reuse of the base will increase traffic on arterial roads near the base, particularly Air Base Road, Vandenberg Drive, England Drive and Bayou Rapides Drive.

This bar graph shows the estimated number of average daily trips projected to be generated by the year 2013 with each of the reuse alternatives. For comparison purposes, the average number of daily trips generated by England Air Force Base prior to base closure was estimated about 9,900. The number of daily trips to and from the site due to reuse would range from approximately 6,180 with the general aviation alternative to over 7,944 with the proposed action by the year 2013.

(Slide #24)

LTC BAUMGARTEL: For purposes of this analysis of the proposed action, we have assumed the relocation of commercial air carrier operations to England Air Force Base. The general aviation alternative assumes that commercial and general aviation aircraft operations remain at Esler Field. The runway and associated airfield facilities are incorporated into two of the proposed redevelopment alternatives. This graph shows the level of annual air operations projected again through the year 2013 for each aviation alternative. For reference, approximately 42,500 air operations occurred at England Air Force Base in 1991. By 2013, the number of annual air operations would increase to about 36,000 with the proposed action and to about 14,000 with the general aviation alternative. Operations for the proposed action would include a mix of air carrier, air cargo, general aviation and military operations associated with the JRTC intermediate staging base. The general aviation alternative would include only general aviation and air cargo operations. The number of operations is not expected to exceed the air space capacity of the region.

(Slide #25)

LTC BAUMGARTEL: Redevelopment of England Air Force Base would increase demands on local utility systems, including water, waste water, solid waste disposal, and electricity and natural gas.

This table shows the projected utility demand increases to purveyors in the area for each of the base reuse alternatives. As a reference, the first column shows the projected utility demand in the year 2013 without reuse of the base. For instance, the total demand on water purveyors in the area is projected to be 21.1 millions gallons per day by 1013.

The other four columns show the increases in utility demand associated with each alternative in the year 2013. For example, with the proposed action, total water demand from area suppliers is projected to be more than half a million gallons per day higher than the demand without reuse of the base. For all utilities under all of the alternatives, increases in demand range from one percent for electricity to five percent for solid waste. All of the projected utility demands would be lower than the preclosure demands on each of the utility purveyors.

(Slide #26)

LTC BAUMGARTEL: The Air Force is conducting investigations to identify, characterize and remediate environmental contamination on England Air Force Base that has resulted from past actions. This comprehensive effort is called the Installation Restoration Program, or IRP.

Cleanup activities will be accomplished in accordance with applicable federal and state laws and regulations. Some initial remedial actions will be underway this year, with further work and monitoring to continue after base closure. Cleanup and monitoring of certain sites at the base may require long-term access to the sites to ensure the success of the remediation efforts.

The Air Force will take all necessary actions for environmental cleanup of the base to protect public health and the environment. Deeds of property transfer will contain this assurance, and all property transfers will be conducted in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act, otherwise known as CERCLA.

Underground storage tanks of the base which are not in compliance with current regulations will be deactivated and removed prior to disposal of the base.

An asbestos survey has been completed for the base. Asbestos containing material which may pose a threat of release will be removed or managed in accordance with Air Force policy. Renovation or demolition of asbestos containing structures during base reuse will require compliance with applicable federal, state and local regulations concerning asbestos containing materials.

Polychlorinated biphenyl compounds, called PCBs, were once used extensively in electric equipment. Since 1979, legislation has regulated the manufacture, distribution and use of PCBs. All PCB transformers and PCB-contaminated transformers have been removed from the base and properly disposed of, or had their dielectric fluid removed and their cases cleaned. The base does have 12 capacitors in the starting units of air conditioning systems in several buildings which will be removed prior to base disposal.

A base Radon survey was conducted several years ago as part of an Air Force-wide Radon assessment and mitigation program. The average indoor concentrations recorded on the base were below the Environmental Protection Agency-recommended mitigation levels of four picocuries per liter of air.

(Slide #27)

LTC BAUMGARTEL: Potential impacts to soils and geology at England Air Force Base with all the alternatives would be short-term and result from ground disturbance associated with construction activities or agricultural reuses. Ground disturbance would range from 160 acres under the proposed action to 1,075 acres under the recreation/tourism alternative. Once construction is complete, most areas will be covered or landscaped, reducing the erosion potential. Agricultural reuses would need to use best management techniques defined by the Soil Conversation Service to reduce the erosion potential. Construction and agricultural uses would minimally alter the soil profiles and would have little effect on the local topography.

(Slide #28)

LTC BAUMGARTEL: Groundwater provides most of the potable water used in the region, including the Alexandria/Pineville area and England Air Force Base. Total water demand in the region is expected to increase with reuse alternatives. Increased water demand by the year 2013 is expected to range from 200 million gallons per year under had proposed action to 95 million gallons per year with the general aviation alternative. However, the water demand with all alternatives would amount to about 10 percent lower than the preclosure demand.

Surface water and surface drainage would also be affected by reuse activities. Construction of new facilities and infrastructures and agricultural uses may change existing flow of surface water runoff. Stormwater discharges would be expected to contain lower levels of residual contaminants, resulting in improved water surface water quality. Reuse activities are expected so comply with applicable federal and state regulations to reduce the potential to affect the quality of ground and surface waters. Installation Restoration Program activities will assure that contamination at hazardous material locations is cleaned up and cannot affect water quality or supplies.

(Slide #29)

LTC BAUMGARTEL: Air pollutant emissions resulting from or related to reuse of the base would include carbon monoxide; nitrogen oxides; sulfur dioxide; particulate matter less than 10 micrometers diameter, also referred to as PM10; and volatile organic compounds or VOCs. Rapides Parish has relatively good air quality and is considered by the Environmental Protection Agency to be in attainment with the National Ambient Air Quality Standards for all of these pollutants.

At a regional scale, with redevelopment of the base, the increase in pollutant emissions would range from four to eight percent above baseline levels for carbon monoxide and three to five percent for VOCs. The increase in emissions of all other pollutants is expected to be less than one percent. The increase in emissions for all pollutants would not cause exceedances of the national or state ambient air quality standards.

(Slide #30)

LTC BAUMGARTEL: This graphic represents the preclosure and future DNL noise contours associated with aviation activities at the base. DNL is the day-night average sound level expressed in decibels, with a penalty added to account for increased annoyance from noise during the night. 65 decibels is equivalent to normal speech at three feet and is the accepted threshold for restrictions on land uses. On this graphic, preclosure 65-decibel DNL noise contour associated with military operations is shown in yellow. The future noise contours associated with the proposed action are shown for 1998 and the year 2003 in blue and red respectively.

As you can see, preclosure military operations at the base exposed a much larger area, over 6,700 acres, to 65 DNL or greater noise levels. By contrast, the land area exposed to 65 DNL or greater noise levels with the proposed action range from about 870 acres in 1998, decreasing to 630 acres in the years 2003 and 2013. The reduction in acres affected by noise between 1998 and 2003 is the result of the federally mandated conversion to quieter jet engines by the year 2000. The 65 DNL or greater noise contours for the general aviation alternative are essentially located within the base boundary in 1998, and completely within the airfield area after the year 2000.

(Slide #31)

LTC BAUMGARTEL: This chart illustrates the approximate number of people that would be exposed to DNL noise levels of 65 decibels or more from aircraft activity with the two aviation alternatives. These estimates are based on present locations of residences and the maximum projected noise. Aircraft activity from the proposed action would expose approximately 30 persons in 1998, but would not expose any persons after the year 2000 with the federally mandated to quieter aircraft. Aircraft noise associated with the general aviation alternative would not expose any persons to DNL noise levels of 65 decibels or greater.

(Slide #32)

LTC BAUMGARTEL: Biological resources considered at England Air Force Base included native and naturalized plants and animals, threatened and endangered species and sensitive or critical habitats. It is assumed that construction and development associated with reuse would occur in previously disturbed area with low sensitivity. However, all of the alternatives could potentially affect some areas on the base containing native vegetation.

Up to 70 acres of native vegetation could be disturbed with each of the alternatives, depending on the exact siting of facilities or proposed reuse activities. The potential conversion of these shrubland and immature bottomland and forest habitats would decrease biodiversity and affect local wildlife populations, but would not affect regional populations. No threatened or endangered species are known to occur on England Air Force Base because of the lack of suitable habitat.

(Slide #33)

LTC BAUMGARTEL: Consultation has been initiated with the Louisiana State Historic Preservation Officer concerning cultural resources at England Air Force Base. No national register of historic places listed prehistoric sites or historic structures have been identified at the base. Consultation with the Louisiana State Historical Preservation Office is ongoing.

In closing, I remind you that the study is in a draft stage. Our goal is to provide Air Force decision-makers with accurate information on the environmental consequences of this proposal: To do this, we are soliciting your comments on the draft Environmental Impact Statement. This information will support informed Air Force decision making.

Now I would like to turn the meeting back over to Lieutenant Colonel Starr.

LTC STARR: Thank you, Colonel Baumgartel. In a moment, after our 15-minute recess, we will move to the main portion of the meeting, which is the public comment period. We are now in recess.

(Whereupon a 15-minute recess was taken)

LTC STARR: All right. We will come back into order now. Before we proceed, when you are about to speak, please state your name clearly before you begin your statement.

Also, remember our panel members are not the decision-makers regarding the proposed action or alternatives. If a speaker during the public comment period requires any clarification or information before speaking, the panel members will try and answer the questions. So that everyone has an opportunity to speak, I ask that repetitive statements be avoided. If you agree with the comments of an earlier speaker, simply indicate your agreement.

First I will call upon Ms. Monique Coco.

MS. COCO: I am Monique Coco, representing Senator John Breaux, and I would like to submit this statement on behalf of Senators Bennett Johnston, John Breaux and Congressman Clyde Holloway.

LTC STARR: Thank you. Mr. James L. Meyer.

MR. MEYER: I am Jim Meyer. My address is 4811 White Chapel Boulevard, Alexandria, zip code 71303. I am Chairman of the England Economic and Industrial Development

District, which we refer to as the England Authority. I am here tonight representing the Authority and to offer these comments for the record:

A formal written presentation will be directed to Lieutenant Colonel Baumgartel on or before September 7th, 1992. Therefore, my comments this evening will be brief.

First and probably foremost is the acknowledgement that the England Authority is in agreement with the proposed action of the draft of the Environmental Impact Statement. While the Authority is confident that the predicted socioeconomic impact will prove to be conservative, it is at this time in agreement with the ranking of the alternatives which were studied.

The local community has been in the reuse business for England Air Force Base since August of 1990, when the preparation of the plan of action for Central Louisiana in transition began. This contingency plan was a document which was implemented to bring about the first appointment of the England Transition Committee in May of 1991. The work of this committee resulted in legislative action during the 1991 session of the Louisiana Legislature which created the England Economic and Industrial Development District.

The Board of Commissioners of the District replaced the England Transition Committee on September 3, 1991, continuing with the reuse activities which were underway.

Louisiana Senators and Congressmen, working with the England Transition Committee, and later the England Authority, brought about an agreement with the Department of Defense that the real and personal assets under England Air Force Base would be transferred to the England Economic and Industrial Development District after closing. This agreement, which was acknowledged in October of 1991, enhanced the planning which was underway for the reuse of the base.

As a result, the England Authority can report tonight that there are over 50 active prospects considering the England Industrial Air Park and community for job-producing activities. Letters of intent or proposals have been received from 19 of these prospects and are being evaluated, and in some cases are under negotiations at this time.

Public benefit conveyance of the real and personal assets to the England Economic and Industrial Development District will culminate in the permanent location of job-producing industry and businesses. It is believed that the timing of the realization of reuse-related jobs will be sooner than that predicted in the Draft Environmental Impact Statement.

The written presentation of the England Authority comments will address some concerns related to the following: The disposal process and reuse planning. Two:

Hazardous materials and waste management sites subject to remediation and restoration. Three: Mitigation costs. And four: Infrastructure maintenance, particularly with respect to the surface and subsurface stormwater drainage systems, rodeways, runways and taxiways, and utilities.

The 16 July 1992 release of the Draft Environmental Impact Statement documents was directed to all interested government agencies, public groups and individuals, soliciting review and comment. The England Authority requests that it be provided a copy of any comments as they are received by the Chief of Environmental Planning Division from these agencies, groups and individuals.

We appreciate the opportunity to appear tonight and look forward to the continued cooperation of the United States Air Force and the Department of Defense by publishing a record of decision which will enhance the economic reuse of this fine Air Force Base, thereby helping the Central Louisiana community to overcome the adverse economic impact resulting from its closure. Thank you.

LTC STARR: Thank you, Mr. Meyer. I call upon Mr. Harold R. Smith.

MR. SMITH: Good evening. I am Harold R. Smith. My address is 6426 Nelmar, Alexandria, zip code 71302. I am Chairman of the Retired Military Committee, working with the England Authority, and we had a brief chance this afternoon to look at the EIS, and appreciate your information this evening that we received.

In the main, we agree with the comments made by Mr. Jim Meyer, and especially we agree with the approach in the EIS of the development of the England Air Force Base after closure. We do, however, think that certain emphasis ought to be placed -- priority emphasis ought to be placed in certain areas.

For instance, the two-approach area of developing England Air Force Base after it closes, the industrial transportation area seems to have gotten the majority of the emphasis. Also, the proposal which we had made at one of the meetings was -- along the same line -- was that a retirement community and tourism center be developed at England Air Force Base, and this was addressed through your comments here this evening.

However, we feel that the emphasis needs to be placed a little bit heavier in that area if in fact the retirement community center is to be developed. During one of our trips to Washington, DC, our committee found out through RR, ARPS and some of the other agencies that one of the key 1.1
elements in developing that area would be that a primary medical facility be readily available and easily accessible to the people that would be having a retirement community center and that type of activity. There is money available

through OSA for the highest and best use of the military medical facility, and we would urge the report to state that; that they use full advantage of these moneys to the highest and best use of the hospital during closure. 1.1

Another thing that we found that emphasis was a little lacking in and possibly should be addressed is the retired people of the area. And here we are not just referring to the military retirees, but in our endeavors we have found that many retirees in the area are looking to the closure of England Air Force Base and wondering what will happen or how this will suit their lifestyle. There was a lot of charts and so forth on the increase in population in the area due to the redevelopment of England Air Force Base. We know that there was nothing addressed as to those retired military and other retirees who might be inclined to move to the area, because of the closure of England Air Force Base. 1.2 We thank you for your time.

LTC STARR: Thank you for your comments, sir. I now call upon Donald J. Maltyby.

MR. MALTYBY: Donald Maltyby, from 28 West out here. 97 Kisatchie Hills, Boyce, Louisiana is my address. I just wanted to ask one question. Is there anybody, or has anyone approached the officials that is involved in this -- are they informing the local papers and the local television stations what is actually happening on these negotiations 1.3

and oncoming things so that the local citizens can be informed of these things? We have heard rumors. Needless to say, there is rumors flying out there a lot more than A-10s are today. That is my question. Are you all going to be giving information to the local papers and to the local TVs where we can hear these things too, as well as the community officials? Thank you. 1.3

LTC STARR: Thank you, Mr. Maltyby.

MR. AEPSKY: Was that question addressed to the panel?

MR. MALTYBY: Yes, it was.

MR. AEPSKY: All right. We are now in the process of initiating something called the Disposal Plan, and we initiated it fairly recently, and we have been working with the England Authority on the Disposal Plan. We met yesterday, and the Authority was informing us of their reuse that they see on the base and some of the prospective customers, and that is pretty much the current status. The Disposal Plan will be developed over the next few months, and we will be using that document for the ultimate decision on the disposition of the property. Does that answer your question?

MR. MALTYBY: May I come back up?

LTC STARR: Yes, you may.

MR. MALTYBY: We have had numerous occasions --

I use the municipal golf course out there, and a lot of our friends do, and all this. But we are hearing a lot of rumors that all of these things are taking place, but what is actually official -- I know it is very early in these events that is going to take place in the near future, but what we would like to know, did they -- or whoever it might be -- did they ask you -- are you all going to inform the public, the people that is paying taxes here in this local community?

MR. AEFSKY: Yes. We are going to --

MR. MALTYBY: Are you going to deal with -- I know you have to talk to the local community leaders, but we would like to know also what is going on, because we have no idea.

MR. AEFSKY: The way the Air Force deals with the communities is the recognized community representative. As I indicated earlier in our written statement, we have a responsibility to keep the Governor informed, and our responsibility is met by dealing with the Authority, and I believe the Authority is working with the community and keeping the community informed of what is happening. It is still early in the process, and I think the Authority is doing a good job of representing the community and their interests.

MR. MALTYBY: All right. Thank you very much.

LTC STARR: Thank you, Mr. Maltyby. I will call upon Jerry Fields.

MR. FIELDS: My name is Jerry Fields, 7625 Esler Field Road. I am the Airport Manager, Alexandria Esler Regional Airport. My comments are directed primarily towards the draft document that you put out, and it shows here on page 4-76 that you show a dual runway use, primarily 1432 and 1836, for flight traffic, all aviation alternatives. But when it gets to the DNL noise contours, you only show the noise contours for 1432. You show no 1.4
noise contours for the 1836 use, which to me, with regards to FAA Part 150 Study Requirements, you would have to have noise contours for each runway use. So I ask you to look at this petition and see if you can't get it also in this document. Thank you.

LTC BAUMGARTEL: I believe I can answer that. I think it is included. The activity on that runway was so small that it wasn't there. That was on the general aviation?

MR. FIELDS: No, sir, all alternatives. It does not show any noise contours for any use on that crosswind runway.

LTC BAUMGARTEL: My feeling, the crosswind runway would not be used in the alternatives from what I understand. The crosswind runway is not being used in the alternatives. We did look at noise just to see what would happen in the general aviation reuse, but it didn't even show up.

MR. FIELDS: To my knowledge, this runway is programmed to be used in the aviation alternatives. There have been no plans to alleviate that runway. If this document is supposed to suffice for the FAA Environmental Study, then it should include that runway as well. 1.4

LTC BAUMGARTEL: All right.

LTC STARR: Thank you, Mr. Fields. Those are all the cards I have received. Are there any other public comments that anyone else wants to make, either written or oral?

(No response)

LTC STARR: Apparently not. I want to thank you all for your attendance tonight. I want to thank you for you patience with us. You have been very curteous, and we appreciate you coming. This hearing is closed.

(Proceedings adjourned)

CERTIFICATE

STATE OF LOUISIANA:

PARISH OF RAPIDES:

I, Bart D. New, Certified Shorthand Reporter and Notary Public, do hereby certify that the above and foregoing 44 pages of typewritten matter constitute a true and correct copy of the proceedings at the time and place as set forth on page one hereof.

In witness whereof, I have hereunto affixed my signature at Alexandria, Louisiana, this 8th day of July, 1992.

BART D. NEW, CSR

Notary Public

STATEMENT OF
UNITED STATES SENATORS J. BENNETT JOHNSTON AND JOHN BREAUX
AND CONGRESSMAN CLYDE HOLLOWAY
FOR THE PUBLIC HEARING ON
THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE DISPOSAL AND REUSE OF
ENGLAND AIR FORCE BASE
AUGUST 11, 1992

We submit our statement this evening on behalf of the England Economic and Industrial Development District and the people and communities which it encompasses. We ask that the Air Force please include our comments in the hearing record.

We urge the Department of Defense and the Air Force to continue to assist the District by transferring directly to it all real and non-mission related personal property from the base. Such transfers are justified because of the contributions which this community has made over the years to the nation and its security through the support of England Air Force Base. Furthermore, the transfers are deserved because of the severe economic impact which closure of the base will have on the community.

Base closure exposes a community and leaves it vulnerable economically in ways that can be difficult to overcome. For that reason, our government must share with the community its resources in the form of real and personal property to enable a rebuilding and restoration in such areas as education, health care and, as important, economic development. It is only proper and equitable for our government to give back to those who have given so much to it, in this case the people and the communities which the England Economic and Industrial Development District encompasses. 2.1

We are proud of the relationship forged with and the contributions made by this community to the Department of Defense, the Air Force and, specifically, England Air Force Base. This community has given its goodwill, cooperation and resources willingly to the Department of Defense and the Air Force. Expenditures have been made over the years to improve infrastructure and facilities to enhance the quality of life and the services it offered to the base and the men, women and families who lived and worked there.

We have been actively involved in reaching an agreement with the Department of Defense and the Air Force on behalf of the EEIDD to transfer directly the base's real and non-mission related personal property.

-2-

It is important to us that in the days and weeks ahead the Department of Defense and the Air Force continue to work very closely with the community in transferring directly to it real and non-mission related personal property from the base in a smooth and timely manner. 2.1

We ask that the public comments received as part of the Draft Environmental Impact Statement be given the close attention and consideration of the Defense Department and Air Force.

Thank you for the opportunity to present this statement.

U. S. Department of Housing and Urban Development
Fort Worth Office, Region VI
1600 Throckmorton
P.O. Box 2905
Fort Worth, Texas 76113-2905

August 12, 1992

Lieutenant Colonel Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
Brooks AFB, TX 78235-5000

Dear Colonel Baumgartel:

SUBJECT: Review of Draft Environmental Impact Statement (DEIS) for Disposal and Reuse of England Air Force Base, Louisiana

The review of the subject DEIS for England AFB has been made by our New Orleans Office and the Regional Office.

We were please to learn of the Installation Restorative Program (IRP) which is an Air Force program to remediate contamination on its installations. The closure of England AFB will not affect the ongoing IRP. All transfer of property will include a covenant with a warranty that all remedial action has been taken.

A determination has been made that the closure of the base will not impact any HUD projects in the Alexandria, Pineville or Rapides Parish, Louisiana. 3.1

We appreciate the opportunity of reviewing the subject EIS.

Sincerely,

R. J. Ramsbottom
Environmental Clearance Officer

Edward G. Randolph, Jr.,
Mayor

September 3, 1992

Lt. Col. Gary Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
Brooks Air Force Base, TX 78235-5000

Re: Draft Environmental Impact Statement (DEIS), July, 1992, and
Socioeconomic Impact Analysis Study, July, 1992,
Disposal and Reuse of England Air Force Base, Louisiana

Dear Col. Baumgartel:

The subject reports do not address the mitigation concerns of the City of Alexandria which have been testified to at every public hearing conducted by the air force in connection with the proposed closure of England Air Force Base. While these mitigation concerns were not re-expressed at the public meeting of August 11, 1992, the England Economic and Industrial Development District Chairman did note for the record that written presentation of these concerns would be forthcoming.

The city asks that the Record of Decision specifically deal with each of these mitigation concerns which are detailed below. The draft documents discuss the environmental and socioeconomic impacts of reuse, but fail to address the socioeconomic impacts of closure, at least with regard to the reimbursement of capital monies expended on behalf of the United States Air Force, which impacted user charges and which would have ultimately been appropriately cost shared in by the U.S. Government through usage fees for the services. 4.1

Rather than reiterate the documentation of these mitigation concerns in this letter, a copy of the testimony presented at the Base Closure and Realignment Commission Public Hearing in Ft. Worth, Texas on May 14, 1991, is attached and is made a part of this transmittal. This document outlines the details of the mitigation concerns which the city of Alexandria respectfully requests be included in the Record of Decision.

Very truly yours,

Edward G. Randolph, Jr.
Edward G. Randolph, Jr.
Mayor

EGR:bf

Encl.

09 SEP 1992

TO THE BASE CLOSURE AND REALIGNMENT COMMISSION
IN PUBLIC HEARING - MAY 14, 1991 - FORT WORTH, TEXAS

TESTIMONY OF
MR. JAMES L. MEYER
CHAIRMAN, ENGLAND 2000 INTERGOVERNMENTAL COMMISSION
ALEXANDRIA, LOUISIANA

My comments will be directed to anticipated closure costs of England Air Force Base, and the extent and timing of potential costs and savings.

The unclassified base closure report addresses the closure costs issues in Criterion IV and Criterion V. The one-time estimated closure costs for the tactical air force bases contained in the report are included in the Costs and Manpower Implications Table presented under Criterion IV. These one time costs for England Air Force Base are estimated to be $43.3 million, with a net present value of $348 million. There is a predicted return on investment of one year to payback. Background data and calculations supporting these figures are not included in the report, nor has that information been made available, although such information was requested. Perhaps full disclosure of this unclassified information could be obtained in due course. It is noted for the record, however, that the amount of time between the release date of the proposed base closure list and today was very short. Consequently, this presentation was prepared without benefit of the Air Force data.

The Central Louisiana community believes that the Base Closing Commission will be interested in certain facts concerning the extent of potential closing costs and savings which are presented here for your careful deliberation.

The final criteria for the closure or realignment of military installations inside the United States did not take into account very legitimate costs which should be reimbursed to the City of Alexandria and the State of Louisiana for infrastructure improvements which were recently completed, or are under construction. The presence of England Air Force Base has always been an element in the planning, programming and construction of infrastructure improvements which are impacted by the demands of its population and the routine activities associated with managing an air base. Concrete examples of such costs can be calculated from data included in the report entitled, Draft Environmental Impact Statement, Proposed Closure of Myrtle Beach Air Force Base, South Carolina, United States Air Force, July 1990. Please consider the following:

Section 4.3.1.4 of this report deals with utilities which are supplied to the base by the City of Alexandria.

(A) With Respect to the Water Supply: The study notes that the anticipated total drop in water demand, because of the base and its personnel, only, would be 9% if the base were to close. The City of Alexandria has recently completed a project, constructing water wells, elevated water storage and connecting water mains in the immediate vicinity of the base. Because of FAA obstruction regulations, the siting of the elevated water tank was, in part, dictated by landing and take off patterns at England.

A primary consideration for this project was the need to reinforce the city's water supply and distribution system in the vicinity of the air base. Had the base not existed, the requirement that the project be constructed would have been extended, and the capacity requirements would have been reduced.

The cost of the project was approximately $2,070,000. The England AFB share of the cost at 9% was $187,000. The U.S. Government did not participate in the capital cost for the project and it was funded by combined enterprise system revenue sources. Accordingly, the U.S. Government should reimburse the City of Alexandria at least $187,000.

(3)

(B) With Respect to Wastewater: The report stated that 13.6% of the average daily flow of the City of Alexandria's wastewater treatment plant is directly attributed to the base. The wastewater treatment system includes aerated lagoons which have been accumulating sludge, as a part of the process, which now must be removed, with disposal as required by the Environmental Protection Agency. It is estimated that the England AFB share of the accumulated sludge volume totals 2,448 dry tons.

The capital cost of the ongoing plant expansion to remove the sludge is approximately $4,760,000. The local share of the funding is $2,960,000, with the balance funded by a grant from the U.S. E.P.A. At 13.6% participation, England's share of the local cost of the capital improvement would be $403,000.

Removal of the 1990 sludge volume of 18,000 dry tons is scheduled for a seven year period. The total monthly cost for the removal is estimated to be $57,000, of which $7,760 per month would be the base's share at 13.6% participation. The present worth of a monthly payment of $7,760 for the seven year period is approximately $498,000.

The U.S. Government, through the U.S. Air Force, would have reimbursed the federal share of the city's portion of the capital cost, and the operating cost, through a monthly user charge. If the base closes, the City of Alexandria would pay these costs through increased user charges to the remaining customers. Therefore, the U.S. Government should reimburse the $901,000 if the base closes.

(C) With Respect to Energy: The City of Alexandria recently completed (1990) improvements to the transportation system which delivers natural gas to the base. The capital cost of this project was approximately $133,600. Reimbursement would have been effected through the sale of natural gas to England. If the base closes, the U.S. Government should reimburse the capital cost of $133,600.

Section 4.3.1.3 of the study addresses transportation:

(A) With Respect to Ground Traffic: The reduction in traffic volume on roadways near England, as a result of base closure, are predicted to be as high as 40% of ADT. The State of Louisiana is constructing, at a total cost of approximately $8,000,000, an interchange on Interstate 49 with a connecting roadway to Air Base Road which leads directly to the front gate of the base.

(5)

The primary justification for this interchange and connecting roadway was England and would not have been included in the construction program if the base were closed. The state's share of the costs, which will be paid by Louisiana taxpayers, is some $800,000, which should be reimbursed by the U.S. Government if the base closes.

(B) With Respect to Water Transportation: The City of Alexandria Port Authority operates a recently completed petroleum off-load dock approximately four miles from the front gate of the air base. The primary justification for the non-federal cost of this facility was the potential to off-load jet fuel for delivery to England. The annual savings to the U.S. government for jet fuel deliveries because of this water transportation were estimated to be between $890,000 and $1,445,000.

The potential cargo throughput for the port at Alexandria included 200,000 tons of petroleum products per year. The quantity of JP-4 for England was estimated to be 54,000 tons, or 27% of the total. Closure of the base would result in a direct negative impact on reimbursement for this non-federal capital expenditure of 27% of its $1,200,000 cost, or $324,000. If the base closes, the U.S. government should reimburse the Alexandria Port Authority this federal share in the amount of $324,000.

In addition to infrastructure costs, consideration should be given to the land. Section 4.3.1.2 of the report deals with land use. Please consider the following:

(A) With Respect to Land: The citizens of Louisiana, through the City of Alexandria, the Rapides Parish (county) government, and the State of Louisiana, donated, at no federal cost, 2,212 acres of land for a "permanent air force base". This acreage, which accounts for 97 percent of the total of 2,282 acres currently owned in fee title, had an equivalent value at the time of donation of approximately $3 million, an amount substantiated by land acquisition costs of the Airport District No. 1 of Rapides Parish in 1953. The 1990 value of this donation, based on the consumer price index, was approximately $15 million. If the base closes, the U.S. Government should reimburse the $15,000,000.

These verifiable costs total almost $17,350,000, and if recognized would result in a one time cost of closure of approximately $60.7 million, an increase of over 40 percent.

These are just some of the typical costs which were not included in DOD's report. Please note also that the

(7)

calculations do not include allowances for the impact resulting from the outmigration of the local civilian population which is expected to occur because of decreased employment opportunities on and off base. Perhaps the U.S. government does not intend to reimburse the citizens of Central Louisiana for its fair share of expenditures paid on behalf of England Air Force Base. This should not be surprising when one considers the obvious, and which was substantiated by briefings of Central Louisiana officials in Washington on at least two occasions by representatives of the U.S. Air Force and the Department of Defense. These briefings revealed that the reduction in the Defense Department expenditures is brought about by the malignant budget deficit, which is compounded by the savings and loan debacle. The citizens of Central Louisiana submit that no community in the United States should be expected to pay a disproportionate share of the nation's recovery from the budget deficit and the savings and loan crisis. All U.S. citizens should pay their fair share. Therefore, all costs should be included in an objective evaluation of which military installations should be closed, and a equitable system of reimbursement for local impacts should be devised. Until this is done, it is respectfully suggested that, as a minimum, the recommendation that England Air Force Base be closed be set aside.

If the Base Closing Commission concludes that England should remain on the closure list, it is respectfully suggested that the report of the Commission recommend that mitigation costs, such as the examples cited, be paid in full by the U.S. Government. An equitable conclusion could be the donation of the air base, with

all of the assets, at no cost, to the people of central Louisiana. In this way, conversion of the base to productive re-use could help overcome the devastating local economic consequences of closure.

Gentlemen, thank you for your attention.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333

September 4, 1992

Lt Col Baumgartel
Chief, Environmental Planning Division]
AFCEE/ESE
Brooks AFB, Texas 78235-5000

Dear Lt Col Baumgartel:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of England Air Force Base, Louisiana. We are responding on behalf of the U.S. Public Health Service.

We have reviewed the DEIS for potential adverse impacts on human health. We note in Table 5-2 that quantities of hazardous materials would increase over closure baseline, and chemical compositions and use rates are unknown at this time. As stated in the DEIS, each reuse tenant would have to comply with applicable federal, state, and local rules and regulations, and would need to establish an adequate emergency response capability. To accomplish this, we agree with the suggestion of establishing a cooperative planning body for hazardous materials and waste management with support of the new individual operators on the base. We note that the Remediation of Installation Restoration Program sites is, and will continue to be, the responsibility of the Air Force. 5.1

We believe issues related to public health have been adequately addressed. Thank you for the opportunity to review and comment on this draft document.

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental
Health

11 SEP 1992

RECEIVED 9/24/92

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

SEP 14 1992

Lt. Col. Gary Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
Brooks Air Force Base, Texas 78235-5000

Dear Lt. Col. Baumgartel:

In accordance with our responsibilities under Section 309 of the Clean Air Act, The National Environmental Policy Act (NEPA), and the Council on Environmental Quality Regulations for Implementing NEPA, the Region 6 Office of the U.S. Environmental Protection Agency (EPA) has completed the review of the Draft Environmental Impact Statement (EIS) for the proposed disposal and reuse of England Air Force Base (AFB), Louisiana.

Under the Defense Base Closure and Realignment Act of 1990, the 1991 Defense Base Closure and Realignment Commission recommended the closure of England Air Force Base, Louisiana. The recommendation went to and was accepted by the President, then submitted to Congress. Since Congress did not disapprove the selection within the time frame allowed by the Act, the recommendation become law.

The Draft EIS discusses four basic reuse alternatives: 1) the "Proposed Action"; 2) the Business/Technology Center Alternative; 3) the Recreation/Tourism Alternative; and 4) the No-Action Alternative. As a result of a study for both environmental and economical impacts, in conjunction with the wishes of the people in the area that will be affected by the closure of the base, the U.S. Air Force has chosen the Proposed Action.

The Proposed Action includes relocating the commercial and general aviation from Alexandria Esler Regional Airport. This will contain a limited air cargo and general aviation maintenance/overhaul operations, included in the plans is the construction of a new passenger terminal at as yet undetermined site. Under this plan, there will be two areas for industrial development. The proposal also includes an institutional area (medical and educational), commercial section, residential section, public/recreation section, which includes expanding the 9 hole golf course to 18 holes within five years, vacant land, identified as environment/sensitive where no reuses are proposed

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17 SEP 1992

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(this includes the Installation Restoration Sites, including several landfill sites, the sewage lagoon, and two low-level radioactive waste sites). No acreage is set aside for agricultural production, except for the continued leasing of approximately 800 acres between the runways and taxiways for limited hay production.

We are encouraged to read that the closure of England is not expected to affect the ongoing Installation Restoration Program (IRP) activity. The IRP will continue in accordance with EPA, state and local regulations, under the U.S. Air Force Disposal Agency Operating Locations. With regards to economic benefits, if the reuse plans are developed as outlined in the Draft EIS, they may contribute to the long term boost to an area that could otherwise suffer economically by the closing of the air base.

While our review of the Draft EIS has not identified any significant adverse environmental impacts with either the disposal or reuse options for the facility, we do note some minor deficiencies in the description of certain relevant issues. Therefore, EPA offers the following comments:

Storm Water

Under Section 402(p) of the 1987 Water Quality Act Amendments, EPA is required to issue National Pollutant Discharge and Elimination System (NPDES) Permits for contaminated storm water discharges for industrial activities.

Final NPDES storm water application regulations, promulgated November 16, 1990, affects cities or unincorporated areas of counties with populations of 100,000 or more and storm water associated industrial activities. Industries are identified primarily by Standard Industrial Classification Codes. Industrial activities are included regardless of whether they are owned/operated by Federal, State or Municipal agencies. 6.1

The Final EIS should discuss the applicability of these storm water regulations to the disposal and reuse alternatives and any necessary permitting requirements.

Pollution Prevention

In agreement with the Pollution Prevention Act of 1990, EPA has launched a significant initiative to incorporate pollution prevention throughout all federal sector activities. We suggest that the Department of Defense describe pollution prevention and waste minimization policies and practices for the proposed action in the Final EIS. 6.2

General Comments

The proposed action and General Aviation Alternative assumes the closure of Alexandria Esler Regional Municipal Airport and the relocation of these general aviation functions to England AFB. The Draft EIS does not explain the present need for closing the Alexandria Esler Airport. Also, the generalized environmental impacts of closing the airport should be addressed in outline form. Clarification in this related action should be included in the Final EIS. 6.3

A number of proposed mitigation measures are identified in the DEIS in order to minimize or compensate for unavoidable impacts. However, there are no assurances that these measures will be implemented once a final reuse option is selected. Some type of agreement or stipulation may be necessary with reuse recipients to insure that all mitigation measures and subsequent monitoring identified in the Draft EIS are carried out. 6.4

We classify your Draft EIS as Environmental Concerns-Insufficient Information (EC-2). Specifically, EPA has no objection to selecting the proposed action as described. However, we are requesting that additional information and analysis be provided in the Final EIS on: the possible need for NPDES Permits for storm water discharges associated with possible industrial activities, pollution prevention activities related to the disposal and reuse plan, the relationship of the proposed action to the closure of Alexandria Esler Regional Municipal Airport and the assurance of proposed mitigation measures for each reuse option.

Our classification will be published in the Federal Register according to our responsibilities under Section 309 of the Clean Air Act.

We appreciate the opportunity to review the Draft EIS. Please send our office one copy of the Final EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460

Sincerely yours,

B. J. Wynne
Regional Administrator

ENGLAND
INDUSTRIAL AIRPARK & COMMUNITY

England Economic &
Industrial Development District
P.O. Drawer 7028, Alexandria, LA 71306
PH: 318-449-3504 FAX: 318-449-3506

ENGLAND AUTHORITY

James E. Holderread
Executive Director

Commissioners:

RAPIDES PARISH
Jack DeWitt
Barry D. Hines
Myron K. Lawson

CITY OF ALEXANDRIA
John Brewer
R. Gene Cotton
George Thompson

CITY OF PINEVILLE
Henry S. Bruser, III

TOWNS
Susan Jaques

CHAMBER OF COMMERCE
Garland Lawrence
James L. Meyer

September 11, 1992

Lt. Col. Gary Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
Brooks Air Force Base, TX 78235-5000

Re: Comments on the Draft Environmental Impact Statement (DEIS) for the Disposal and Reuse of England Air Force Base, Louisiana

Dear Col. Baumgartel:

The England Economic & Industrial Development District (England Authority) is the designated reuse organization for England Air Force Base, and will be the recipient of most, if not all, of the assets of the facility when the public benefit transfer is completed. As such, these comments are offered by the organization which will have a vital and fiduciary interest in the impacts resulting from disposal and reuse.

Section 1.2 **Decisions to be Made**, page 1-2, states that the Record of Decision (ROD) will determine the method of disposal available to the Air Force. It is the position of the England Authority, the local community and this area's congressional delegation that the method of disposal for England Air Force Base was resolved in October, 1991, when the Secretary of Defense determined that he intends to make a public benefit transfer of real and personal property at England Air Force Base to the England Authority as soon as possible after closure. This was confirmed in a letter, dated October 25, 1991, from the Assistant Secretary of Defense to Senator J. Bennett Johnston.

As a result of the Secretary's determination, the England Authority has worked diligently to affect civilian reuse of the facility. The base reuse plan and an active marketing program will result in occupancy of some of the facilities by license or interim use leases before the official date of closure. The predetermination by the Secretary of the public benefit transfer has enhanced this effort. The ROD, therefore, should acknowledge the expressed intention of the Secretary, as evidenced by the letter from the Assistant Secretary of Defense.

The scope of study for the DEIS states, on page S-2, that the comments and concerns expressed at the Public Scoping Meeting held in Alexandria on October 30, 1991, and in written correspondence received by the USAF thereafter, were used to determine the scope and direction of studies and analyses required to accomplish the DEIS.

16 SEP 1992

Lt. Col. Gary Baumgartel
September 11, 1992
Page 2

Comments from the England Authority presented at the scoping meeting asked that the contents of the DEIS for the proposed closure of Myrtle Beach AFB be incorporated in the scope of study for the DEIS for the disposal and reuse of EAFB. 7.1

It is requested that the Final EIS specifically and in detail identify any and all hazardous materials/hazardous waste sites which have not been restored, but which will be restored prior to transfer of the assets, and that maps of field surveys accurately locating the boundaries of any and all environmentally sensitive areas be prepared and included in the Final EIS. 7.2

While the DEIS addresses hazardous materials/hazardous waste management, there are two areas of particular concern which require further attention.

(1) **Lead Based Paint.** The DEIS does not specifically discuss the problems associated with metal structures which are coated with lead-based paint. During the preparation of the report, it was requested that such structures be identified and catalogued.

It is requested that the Final EIS be published with this additional information, including the possible need for remediation before transfer of the property.

Examples of the above are the elevated water tanks which have a base coat which contains lead. These tanks are situated at locations which will require very costly protection measures when the existing coatings must be removed for maintenance, repair and recoating. Under current laws and regulations, the recoating costs under these circumstances will exceed the value of the tanks. 7.3

It is requested, therefore, that the ROD clearly address and encumber the U.S. Government with the future cost of handling this environmentally hazardous material when the paint systems age and have to be replaced.

(2) **Asbestos-Containing Materials (ACM).** The DEIS states, on page S-11, that, "Demolition and renovation of structures with asbestos-containing materials are assumed to be performed by new owners....." This is a general statement which does not appear to be supported by the Air Force Policy on Management of Asbestos at Closing Bases (Appendix G). 7.4

Lt. Col. Gary Baumgartel
September 11, 1992
Page 3

The stated policy would seem to require that the some 90 buildings (Section 3.3.5, page 3-63) which were detected as containing asbestos should be identified and categorically rated such that the ROD would be specific regarding the disposition of the ACM.

It is requested that the ROD require that the asbestos-containing structures be removed by the Air Force prior to transfer, after the inventory and recommendations have been reviewed by the England Authority as to future reuse. 7.4

In general, the England Authority believes that all hazardous materials and hazardous waste placed on EAFB by the U.S. Department of Defense or generated as a result of U.S. Department of Defense activities are presently and forever will be, the sole responsibility of the U.S. Government, Department of Defense. Is is requested that the ROD so state. 7.5

Section 3.2.2.1 Land Use in dealing with a Closure Baseline, page 5-15, makes certain assertions concerning the Air Installation Compatible Use Zone (AICUZ). The local land use ordinances will remain after base closure. Confirming letters from the City of Alexandria and the Rapides Parish Police Jury, the body politics having jurisdiction, are attached and are made a part of this submittal. 7.6

The Air Force Center for Environmental Excellence and Environmental Planning Division (AFCEE/ESER) has provided comments received from the U.S. Environmental Protection Agency (EPA) on the DEIS, and comments received from the Federal Aviation Administration (FAA) on the Preliminary Draft EIS (PDEIS). Comments by the England Authority on these documents are:

(1) The EPA comments, in a letter dated September 8, 1992, request that additional information be included in the final EIS and that the document address and direct certain assurances "with reuse recipients". This is an open-ended proposition at this time which could result in serious consequences on which the England Authority has not had the opportunity to react.

It is requested, therefore, that the England Authority be allowed to respond to any language which may be included in the Final EIS or the ROD which could be controversial. Furthermore, the publication of the Final EIS and the ROD should not precede this response.

Lt. Col. Gary Baumgartel
September 11, 1992
Page 4

(2) The FAA comments on the PDEIS are contained in a letter, dated July 17, 1992, to the Chief of the Environmental Planning Division. The England Authority generally concurs with the process outlined in the letter, but offers the following:

(a) By resolution, the Authority has adopted a reuse strategy which parallels the "proposed action" in the DEIS.

(b) The Reuse Feasibility Study and Final Reuse Plan is in the final stages of completion by the Authority's consultants.

(c) The Authority's proposal to the U.S. Army for the location of the Intermediate Staging Base (ISB) for the Joint Readiness Training Center (JRTC) at Fort Polk is in the "best and final stage".

(d) The Authority's consultants are preparing an interim Airport Layout Plan (ALP) to meet ISB requirements (FAA Part 139 Limited Certification).

(e) The Authority is preparing a Request for Qualifications (RFQ) for the selection of consultants to prepare a Master Plan and Final ALP.

(f) The England Industrial Airpark (formerly EAFB) has been accepted into the Louisiana Airports System Plan. A request has been made for placement in the National Plan Integrated of Airport Systems (NPIAS).

(g) The legislation creating the England Economic and Industrial Development District gives broad powers to the District. These powers will enable the District to provide funding for the development of large hangars and other facilities to attract and serve the needs of air cargo and/or large aircraft maintenance companies.

(h) The clear zone requirements, as outlined in Attachment 2, Memorandum Action: Clear Zone Requirements for Alexandria Long Range Radar, are totally unacceptable. All other efforts and solutions to solve the false targets issue must first be pursued (False Blanking System, Beacon Run Length Maps, Installation of RF absorbent material, Direct Sidelobe Suppression).

Lt. Col. Gary Baumgartel
September 11, 1992
Page 5

A Clear Zone with a radius of 2000 feet, the removal of the listed buildings and a permanent prohibition on construction in this area will cause severe economic loss to this facility and the community. When original cost to the United States taxpayer is analyzed, one finds that more than $5,000,000 has been invested in the buildings on the list. Factoring in the construction price index since the various dates of construction (see table below) results in a 1992 dollar replacement cost of almost $28,500,000. Even without adding the cost of demolition, the benefit/cost ratio of retaining the buildings is clear.

REPLACEMENT VALUE ESTIMATE
15 BUILDINGS AT EAFB

Building Number	Year Built	Initial Cost	ENR Index Number	Escalation Factor	Replacement Cost (March, 1992)
2607	1956	$ 225,000	692	7.12	$ 1,602,000
2608	1972	5,000	1753	2.81	14,050
2620	1959	1,000	797	6.18	6,180
2506	1981	10,000	3535	1.39	13,900
2505	1958	225,000	759	6.49	1,460,250
2504	1958	155,000	759	6.49	1,005,950
2503	1958	260,000	759	6.49	1,687,400
2528	1971	164,000	1581	3.12	511,680
2502	1956	1,433,000	692	7.12	10,202,960
2501	1985	278,000	4195	1.17	325,260
2107	1968	182,000	1155	4.27	777,140
2108	1973	430,000	1895	2.6	1,118,000
2102	1966	858,000	1019	4.84	4,152,720
2137	1956	741,000	692	7.12	5,275,920
2142	1952	34,000	569	8.66	294,440
TOTALS		$5,001,000			$28,447,850

NOTES:

1. Prices are escalated using Engineering News Record Construction Cost Index Base: 1913 = 100

2. Prices are escalated to March 1992 (latest available update) March 1992 = 4927

The restrictions would also eliminate 2,300 feet of flight line frontage from future reuse. This limited and very valuable space must remain open for reuse development.

Lt. Col. Gary Baumgartel
September 11, 1992
Page 6

There are presently three major prospective tenants and eight minor tenants who have written letters of intent with this area in mind.

Even if the above action is taken, there is no assurance the issue would be resolved. If the listed buildings are removed then other structures may also cause false targets.

Section 3.4.2 Water Resources deals with surface water and drainage, but does not mention some existing problems which should be addressed.

Some drainage tiles that were installed many years ago have been damaged. Others have collapsed. The most obvious example of drainage tile failure is that which caused a portion of Taxiway B to subside between the approach end of Runway 14-32 and the approach end of Runway 18-36. The taxiway was closed because the depression across it is deep enough to possibly prevent aircraft from crossing. Another suspected drainage tile failure is on Runway 18-36, just north of the intersection of Taxiway J. At that point a slight depression was detected by an FAA inspector. Remedial action should be taken to repair failures and to prevent further deterioration of the storm water drainage system. 7.7

It is requested that the ROD direct that the required repairs be completed before transfer of the property.

The England Authority is in agreement with the Proposed Action of the DEIS which is titled Industrial Airpark/Regional Airport. In order to expedite the implementation of the Proposed Action rapidly, it is requested that the ROD recommend that the USAF immediately begin lease negotiations with the England Authority so as to allow and facilitate the development of the England Industrial Airpark and Community through the provisions it has under federal law to execute long term leases. 7.8

Very truly yours,

James L. Meyer

James L. Meyer
Chairman

JLM:bf

Encl.

September 10, 1992

Mr. Jim Meyer, Chairman
England Economic & Industrial
Development District
Post Office Drawer 5444
Alexandria, LA 71301

Dear Mr. Meyer:

RE: England AFB Disposal and Reuse DEIS (Pages 3-15)

This is in response to your request for comment by the Rapides Parish Police Jury on England AFB Disposal and Reuse DEIS (pages 3-15).

The Rapides Parish Police Jury developed and approved by Ordinance an Air Installation Compatible Use Zone (AICUZ) on May 1, 1989, to prevent incompatible uses or the creation or establishment of flight hazards and provide for protection of property in the vicinity of England Air Force Base.

This Ordinance will continue in force until such time that the Rapides Parish Police Jury finds it inconsistent with the uses of England Air Force Base property.

Very truly yours,

Jack DeWitt
Parish Administrator
Rapides Parish Police Jury

TELEPHONE
318-473-6660

P.O. BOX 1150
ALEXANDRIA, LOUISIANA 71309-1150

FAX
318-473-6670

Regular monthly meetings on second Tuesday of each month at 3:00 p.m.

JOHNNY H. DOWNS
PRESIDENT

W.T. "TEE" MOREAU
VICE PRESIDENT

AT LARGE
[illegible]
W.T. "TEE" MOREAU

DISTRICT ONE
JOHNNY H. DOWNS

DISTRICT TWO
JOHN E. ALLEN, JR.

JON W. GRAFTON, CMC/AAE
CITY CLERK

P. O. BOX 71
ALEXANDRIA, LA [illegible]
PHONE: [illegible]
FAX: [illegible]

DISTRICT THREE
CHARLES F. [illegible], JR.

DISTRICT FOUR
ROBERT L. [illegible]

DISTRICT FIVE
[illegible]

September 10, 1992

Mr. Jim Meyer
Chairman
England Economic & Industrial
Development District
P.O. Drawer 5444
Alexandria, LA 71301

RE: Page 3-15 of England AFB Disposal and Reuse DEIS

Dear Mr. Meyer:

This is in response to your request for comment by the City of Alexandria on Page 3-15 of England AFB Disposal and Reuse DEIS.

The City of Alexandria in its recently adopted master plan sets as a strategic goal the establishment of general aviation at what is known now as England Air Force Base. As you know, prior to England, this was the Alexandria Municipal Airfield. The City's master plan merely returns the City to its roots of air transportation development.

Further, to implement the master plan the Alexandria City Council enacted specific regulations to protect land development for air use in its new land development code. In addition, the Council expressed the intent to work with the England Authority to enact regulations sufficient to meet the needs of England redevelopment.

In summary, it is the adopted policy of the City to support and anticipate aviation use of England after it is closed.

Sincerely,

Jon W. Grafton, CMC/AAE
City Clerk

JWG/nb

Rec'd SEP 1992

B. Alexandria shall support the reuse of England AFB as a regional employment center through intergovernmental cooperation with the England Economic and Industrial Development District.

- Alexandria's utilities, road system, rail and riverport facilities shall be fully linked to England as suited to and supportive of the reuse.
- A formal corridor shall be provided between Alexandria's downtown and England. The transportation corridor linking downtown, riverport and England shall be protected and enhanced through the application of land use and development controls that promote compatibility, efficiency and attractiveness.
- Airfield Compatibility Zoning around England shall be maintained in protecting any continued aviation use.
- Regional transportation planning shall provide an enhanced entry to England through improved connections with Highway 28 West and I-49.

C. Alexandria shall promote the economic and physical linkage of establishments along MacArthur Drive, including the nearby Regional Mall and Cabrini Hospital, in attracting a greater share of the regional and tourist market.

- Access between Interstate 49 and MacArthur Drive shall be made attractive and convenient by creating a gateway at the north and south connections. Signage, lighting, pennants and landscaping improvements and the guided placement of new buildings shall be utilized in creating the gateways.
- Corridor design improvements shall be made to facilitate traffic between establishments, enhance the overall physical appearance and adapt a more human scale. Demarcation of access points shall include landscaping, lighting and signage. Grouping of buildings and enhancement of parking areas shall be provided through landscaping and common signage. Conversion of access roads along MacArthur to one-way systems shall be integrated with improvements.
- Regional marketing strategies shall be developed wherein public and private special events are coordinated.

D. Alexandria shall continue support for the viability of its downtown through the establishment of economic incentives and physical improvements.

- Tourist activity shall be expanded through the provision of adequate and convenient parking and the addition of an Exhibition Hall at the Convention Center.
- The Convention Center, hotels, structured parking and Exhibition Hall shall be physically and economically linked with the riverfront in attracting new activities.

- Upgrading of the State's priorities shall be supported for increasing Highway 28 to four lanes from the Texas state line to Jonesville and continuing to the Mississippi state line.

- A loop highway system shall be developed connecting Sugar House Road and the eastern side with Interstate 49 and further west to Highway 28 and England.

- Commercial and/or general aviation services shall be provided at England in linking the facilities economically with nearby major production and distribution activities and in increasing accessibility for larger population areas.

- A regional electronic communication system shall be established for improving market connections and information sharing.

G. Alexandria shall support expansion of the agri-business and timber industries.

- Prime agricultural land along Alexandria's boundaries shall be protected through stringent land use and drainage controls in cooperation with the Parish.

- The location of agri-business and timber operations shall be attracted through utilization of the transportation system to link production areas with processing and distribution facilities.

- The Farmers Market operation shall be examined more extensively in broadening its attraction.

H. The area's educational resources shall be coordinated and enhanced in attracting new industries and higher paying employment opportunities.

- Educational excellence programs in the public and private schools shall be supported.

- Job training programs at local technical schools shall be expanded.

- Advanced college training shall be provided in one or more convenient locations within the community. The state's four-year institutions shall offer junior/senior-level and graduate-level courses of selective types at the two-year institution and possibly other nearby locations.

- An Educational Council shall be established to coordinate the region's educational programs.

Issue. Alexandria is experiencing a loss of population primarily among younger families with children. Reasons given are both economic and social — the persons leaving are seeking better

RECEIVED

Written Comment Sheet

Draft Environmental Impact Statement
Disposal and Reuse of England AFB, Louisiana

Thank you for attending this hearing. Our purpose for hosting this hearing is to summarize for you the environmental consequences of the disposal and reuse of England AFB, and afford you an opportunity to comment on the Draft Environmental Impact Statement.

Date: Sept 3, 1929

We the members of the First St. Mark Church Would like to know if there would be any Building or Portable Building at E.F.B. Alex LA. the we Might Purchase. We are trying to start a Day care for our Working Mothers. And if we Could Purchase One So Would you please give us and answer on this. And if you might help us get the Building to the Church ground. We are looking forward to hear from you. Thank you Very much, Sis Rachel Scott 8.1

Name: New St Mark Missionary Baptist Church

Address: 1516 Reed Ave. Alex. LA. 71301

Street Address — City/State Zip Code

Please hand this form in or mail to:

AFCEE/ESE
Attn: Lt. Col. Gary Baumgartel
Brooks AFB, TX 78235-5000

11 SEP 1992

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P. O. Box 94245
Baton Rouge, Louisiana 70804-9245

(504) 929-9190
September 8, 1992

EDWIN W. EDWARDS
GOVERNOR

JUDE W. P. PATIN
SECRETARY

Lt. Col. Gary Baumgartel
Chief, Environmental Planning Division
AFCEE/ESE
Brooks AFB, Texas 78235-5000

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT
DISPOSAL AND REUSE OF ENGLAND AIRFORCE
BASE, LOUISIANA

Dear Lt. Col. Baumgartel:

The Department has reviewed the Draft Environmental Impact Statement (DEIS) on the Disposal and Reuse of England Air Force Base, Louisiana, and our comments are as follows:

1. The basis for the trip generation estimates should be cited in the EIS. For example, were the estimates developed from current ITE trip generation rates? 9.1

2. With the exception of the "No Action" alternative, it would be desirable to realign McKiethen Road/Vandenburg Drive at State Highway 28 to eliminate the approximate 650 feet offset between the present intersections. This would enhance the distribution of trips generated by base reuse.

3. It appears that the extension of Rocket Avenue to Harold Miles Park Road (desirably at the Beagle Club Road intersection) would improve internal circulation and access to the site. 9.2

4. Consideration should also be given to replacing the current intersection configuration of Airbase Road and England Drive with a standard "T" intersection configuration to enhance traffic operations and safety.

We appreciate the opportunity to comment on the DEIS.

Sincerely,

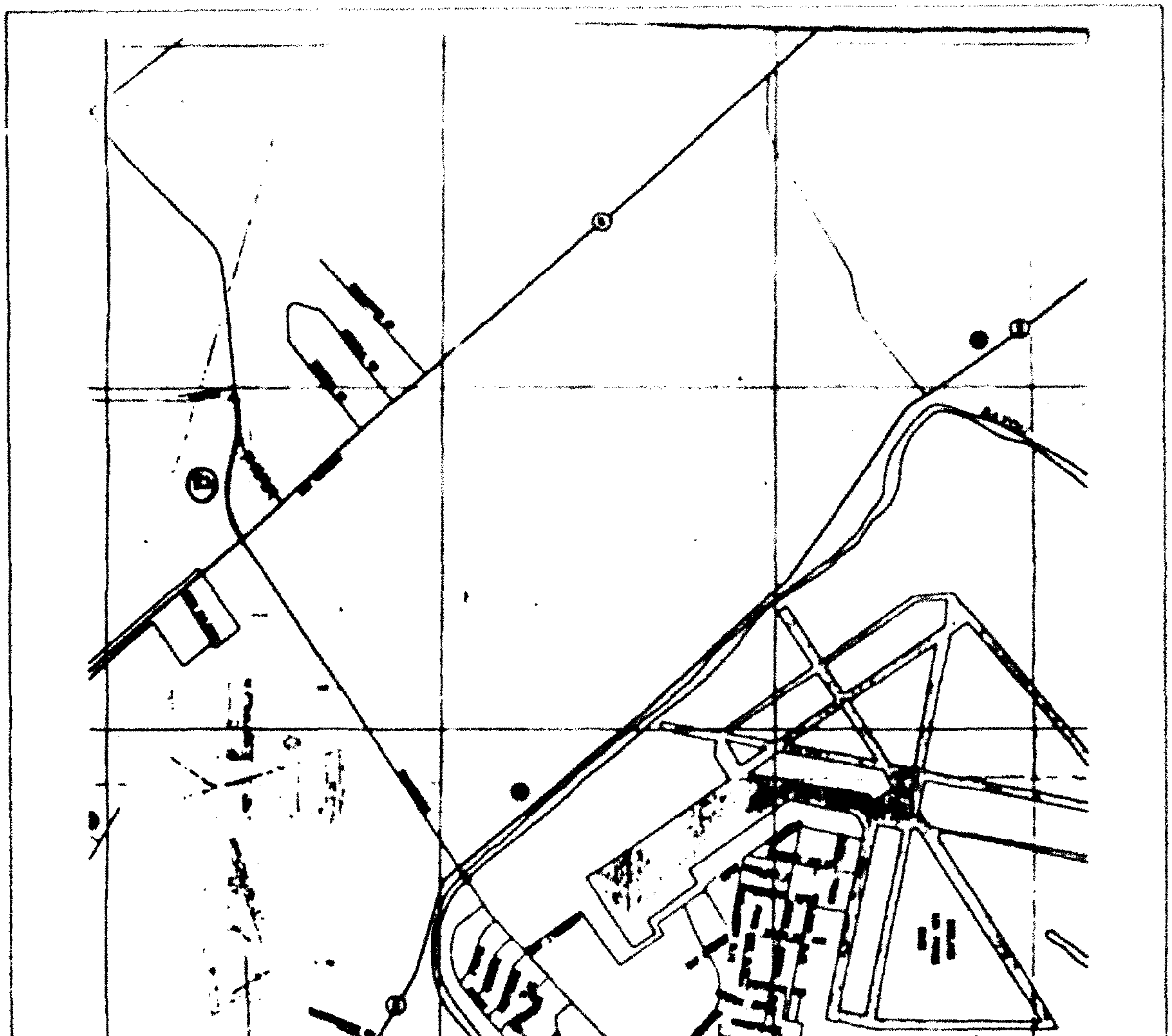
V. Pizzolato

Vincent Pizzolato
Environmental Engineer

VP/ALB/mma
Doc. 65
Attachment

AN EQUAL OPPORTUNITY EMPLOYER
A DRUG FREE WORKPLACE

Rec'd 11 SEP 1992



DOCUMENT 10

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL AFFAIRS
POST OFFICE BOX 649
ALBUQUERQUE, NEW MEXICO 87103

ER 92/692

September 8, 1992

Lt. Colonel Baumgartel
Chief of Environmental Planning Division
AFCEE/ESE
Brooks Air Force Base, Texas 78235-5000

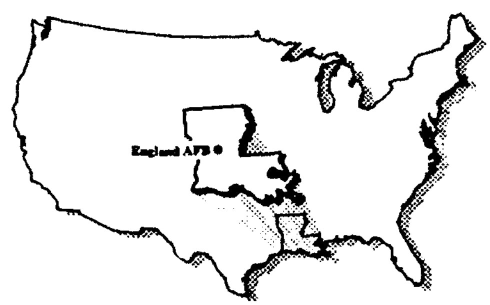
Dear Colonel Baumgartel:

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for Disposal and Reuse of England Air Force Base, Rapides Parish, Louisiana. In this regard, we find that this DEIS adequately addresses the interests and concerns of this Department. 10.1

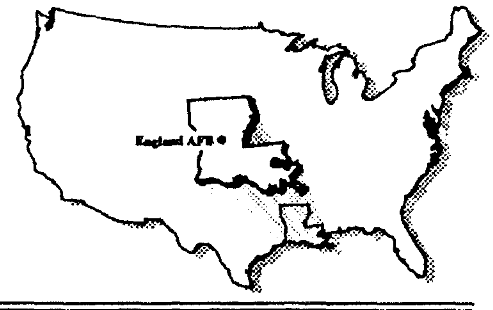
Thank you for the opportunity to comment on this statement.

Sincerely,

Glenn B. Sekavec
Acting Regional Environmental Officer



APPENDICES



APPENDIX A

APPENDIX A

GLOSSARY OF TERMS AND ACRONYMS/ABBREVIATIONS

GLOSSARY OF TERMS

A-Weighted Sound Level (dBA). A number representing the sound level which is frequency-weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI S1.4-1971) and accounts for the response of the human ear.

Accident Potential Zones (APZ). Areas immediately beyond the ends of Department of Defense fixed-wing runways that have a higher potential for aircraft accidents than other areas. Specifically, APZs fall into two categories: APZ 1 is the area beyond the runway clear zone that possesses a significant potential for accidents, and APZ 2 is an area beyond APZ 1 that has a measurable potential for accidents.

Acoustics. The science of sound which includes the generation, transmission, and effects of sound waves, both audible and inaudible.

Accumulation Point. A location where a generator accumulates hazardous waste or hazardous materials awaiting movement to a treatment, storage, or disposal (TSD) facility. An accumulation point does not require an Environmental Protection Agency TSD permit as long as waste is stored for less than 90 days.

Active Fault. A fault on which movement has occurred during the past 10,000 years and which may be subject to recurring movement, usually indicated by small, periodic displacement or seismic activity.

Advisory Council on Historic Preservation. A 19-member body appointed, in part, by the President of the United States to advise the President and Congress and to coordinate the actions of federal agencies on matters relating to historic preservation, to comment on the effects of such actions on cultural resources, and to perform other duties as required by law (Public Law 89-655; 16 USC 470).

Aesthetics. Referring to the perception of beauty.

Aggregate. Materials such as sand, gravel, or crushed stone used for mixing with a cementing material to form concrete, or alone, as railroad ballast or graded fill.

Air Installation Compatible Use Zone. A concept developed by the Air Force to promote land use development near its airfields in a manner that protects adjacent communities from noise and safety hazards associated with aircraft operations, and to preserve the operational integrity of the airfields.

Aircraft Operation. A takeoff or landing at an airport.

Airport Radar Service Area. Regulatory airspace surrounding designated airports wherein air traffic control provides vectoring and sequencing on a full-time basis for all instrument flight rule and visual flight rule aircraft.

Airport Traffic Area. Airspace within a radius of 5 statute miles of an airport with an operating control tower, encompassing altitudes between the surface and 3,000 feet above ground level, in which an aircraft cannot operate without prior authorization from the control tower.

Alluvial Plain. Plain produced by deposition of alluvium.

Alluvial Fan. Alluvial deposit of a stream where it issues from a gorge upon a plain. Viewed from above, it is the shape of an open fan, with the apex at the mouth.

Alluvium. Clay, silt, sand, gravel, or similar material deposited by running water.

Ambient Air. That portion of the atmosphere, outside of buildings, to which the general public has access.

Ambient Air Quality Standards. Standards established on a state or federal level that define the limits for airborne concentrations of designated "criteria" pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, total suspended particulates, ozone, and lead), to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).

Aquifer. The water-bearing portion of subsurface earth material that yields or is capable of yielding useful quantities of water to wells.

Archaeology. A scientific approach to the study of human ecology, cultural history, and cultural process, emphasizing systematic interpretation of material remains.

Arterial. Signalized street that serves primarily through-traffic and provides access to abutting properties as a secondary function.

Artesian. A term referring to groundwater confined under hydrostatic pressure.

Artifact. Anything that owes its shape, form, or placement to human activity. In archaeological studies, the term is applied to portable objects (e.g., tools and the by-products of their manufacture).

Artificial Recharge. Spreading of water in infiltration ponds or direct injection of water in wells to replenish groundwater.

Asbestos. A carcinogenic substance formerly used widely as an insulation material by the construction industry; often found in older buildings.

Association. Two or more soils occurring together in a characteristic pattern.

Attainment Area. A region that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act.

Average Annual Daily Traffic. For a 1-year period, the total volume passing a point or segment of a highway facility in both directions, divided by the number of days in the year.

Average Travel Speed. The average speed of a traffic stream computed as the length of a highway segment divided by the average travel times of vehicles traversing the segment, in miles per hour.

Avian. Of, relating to, or derived from birds.

Bedrock. Geologic formation or unit which underlies soil or other unconsolidated surficial deposits.

Benzene. Colorless volatile, flammable, toxic liquid aromatic hydrocarbon.

Biophysical. Pertaining to the physical and biological environment, including the environmental conditions crafted by man.

Biota. The plant and animal life of a region.

Calcareous. Containing calcium carbonate.

Capacity (transportation). The maximum rate of flow at which vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions.

Capacity (Utilities). The maximum load a system is capable of carrying under existing service conditions.

Carbon Monoxide (CO). A colorless, odorless, poisonous gas produced by incomplete fossil-fuel combustion. One of the six pollutants for which there is a *National Ambient Air Quality Standard*. See Criteria Pollutants.

Class I, II, and III Areas. Under the Clean Air Act, clean air areas are divided into three classes. Very little pollution increase is allowed in Class I areas, some increase in Class II areas, and more in Class III areas. National parks and wilderness areas receive mandatory Class I protection. All other areas start out as Class II. States can reclassify Class II areas up or down, subject to federal requirements.

Clear Zone. The area surrounding a runway where the aircraft accident risk is high enough that necessary land use restrictions would prohibit reasonable economic use of the land.

Coefficient of Storage (= Storativity). The volume of water an aquifer releases from or takes into storage per unit surface area of the aquifer per unit change in head.

Commercial Aviation. Aircraft activity licensed by state or federal authority to transport passengers and/or cargo for hire on a scheduled or nonscheduled basis.

Comprehensive Plan. A public document, usually consisting of maps, text, and supporting materials, adopted and approved by a local government legislative body, which describes future land uses, goals, and policies.

Cone of Depression. A depression in the water table that develops around a well from which water is being withdrawn.

Contaminants. Undesirable substances rendering something unfit for use.

Contamination. The degradation of naturally occurring water, air, or soil quality either directly or indirectly as a result of human activities.

Control Zone. Controlled airspace with a normal radius of 5 statute miles from a primary airport plus any extensions needed to include instrument arrival and departure paths, encompassing altitudes between the surface and 14,449 feet mean sea level.

Corridor. A strip of land of various widths on both sides of a particular linear facility such as a highway or rail line.

Corrosive. A material that has the ability to cause visible destruction of living tissue and has a destructive effect on other substances. An acid or a base.

Council on Environmental Quality (CEQ). Established by the National Environmental Policy Act (NEPA), the CEQ consists of three members appointed by the President. CEQ regulations (40 CFR Parts 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements, and the timing and extent of public participation.

Criteria Pollutants. The Clean Air Act required the Environmental Protection Agency to set air quality standards for common and widespread pollutants after preparing "criteria documents" summarizing scientific knowledge on their health effects. Today there are standards in effect for six "criteria pollutants": sulfur oxide (SO_2), carbon monoxide (CO), particulate matter less than 10 micrometers in diameter (PM_{10}), nitrogen dioxide (NO_2), ozone (O_3), and lead (Pb).

Cultural Resources. Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason.

Cumulative Impacts. The combined impacts resulting from all activities occurring concurrently at a given location.

Day-Night Average Sound Level (DNL). The 24-hour average-energy sound level expressed in decibels, with a 10-decibel penalty added to sound levels between 10:00 p.m. and 7:00 a.m. to account for increased annoyance due to noise during night hours.

Decibel (dB). A unit of measurement on a logarithmic scale which describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.

Developed. Land, a lot, a parcel, or an area that has been built upon, or where public services have been installed prior to residential or commercial construction.

Direct Impact. Effects resulting solely from the proposed program.

Discharge. Release of groundwater in springs or wells, through evapotranspiration, or as outflow.

Disturbed Area. Land that has had its surface altered by grading, digging, or other construction-related activities.

Easement. A right or privilege (agreement) that a person may have on another's property.

Effect. A change in an attribute. Effects can be caused by a variety of events, including those that result from program attributes acting on the resource attribute (direct effect); those that do not result directly from the action or from the attributes of other resources acting on the attribute being studied (indirect effect); those that result from attributes of other programs or other attributes that change because of other programs (cumulative effects); and those that result from natural causes (e.g., seasonal change).

Effluent. Waste material discharged into the environment.

Employment. The total number of persons working (includes all wage and salary workers), both civilian and military, and proprietors.

Endangered Species. A plant or animal species that is threatened with extinction throughout all or a significant portion of its range.

Environmental Impact Analysis Process. The process of conducting environmental studies as outlined in Air Force Regulation 19-2.

Environmental Protection Agency (EPA). The independent federal agency, established in 1970, that regulates environmental matters and oversees the implementation of environmental laws.

Environmental Protection Agency Hazardous Waste Number. The number assigned by the Environmental Protection Agency to each hazardous waste listed in 40 CFR, Part 261, Subpart D, and to each characteristic identified in 40 CFR, Part 261, Subpart C.

Erosion. Wearing away of soil and rock by weathering and the action of streams, wind, and underground water.

Escarpment. A long, more or less continuous cliff or steep slope facing one general direction separating two or more level or gently sloping surfaces produced by erosion or faulting.

Evapotranspiration. Loss of water from the soil by evaporation from the surface and by transpiration from the plants growing thereon.

Expenditure. A disbursement of funds by a government entity; includes operation and maintenance costs, as well as capital costs.

Fault. Fracture in earth's crust accompanied by a displacement of one side of the fracture with respect to the other and in direction parallel to the fracture.

Fault Block. Crustal units bounded by faults.

Fiscal Year. In government finance, the 12-month period that corresponds to the jurisdiction's accounting period, typically beginning October 1st and ending September 30th.

Fleet Mix. Combination of aircraft used by a given agency.

Floodplain. The relatively flat land lying adjacent to a river channel that is covered by water when the river overflows its banks.

Fossiliferous. Containing fossils.

Formation. A mappable body of rock having a general homogeneity of composition, structure, texture, and other characteristics.

Freeway. A multilane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Frequency. The time rate (number of times per second) that the wave of sound repeats itself, or that a vibrating object repeats itself -- now expressed in Hertz (Hz), formerly in cycles per second (cps).

Friable. Easily crumbled or reduced to powder.

Fugitive Dust. Particulate matter composed of soil that is uncontaminated by pollutants from industrial activity. Fugitive dust may include emissions from haul roads, wind erosion of exposed soil surfaces, and other activities in which soil is either removed or redistributed.

Fugitive Emissions. Emissions released directly into the atmosphere that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.

Functional Hierarchy of Roadways. Classification of roadways by the relative importance of the movement and access function assigned to them.

Fungicides. Any substance which kills or inhibits the growth of fungi.

General Aviation. All aircraft which are not commercial or military aircraft.

Geomorphic. Pertaining to the form of the earth or its surface features.

Ground Acceleration. Force from an earthquake causing movement of bedrock. Measured in fractions of the acceleration of gravity.

Groundwater. Water within the earth that supplies wells and springs.

Groundwater Basin. Subsurface structure having the character of a basin with respect to collection, retention, and outflow of water.

Groundwater Recharge. Absorption and addition of water to the zone of saturation.

Habituate. To become accustomed to frequent repetition or prolonged exposure.

Hazardous Material. Generally, a substance or mixture of substances that has the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or posing a substantial present or potential risk to human health or the environment. Use of these materials is regulated by Department of Transportation (DOT), Occupational Safety and Health Administration (OSHA), and Superfund Amendments and Reauthorization Act (SARA).

Hazardous Waste. A waste, or combination of wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Regulated under the Resource Conservation and Recovery Act (RCRA).

Heavy Metals. A metal (e.g., lead, mercury, cadmium, and chromium) of atomic weight greater than sodium (a.w.-22.9 grams/molecule) that forms soaps on reaction with fatty acids.

Herbicides. A pesticide, either organic or inorganic, used to destroy unwanted vegetation, especially various types of weeds, grasses, and woody plants.

Herpetofauna. Reptiles and amphibians.

Historic. A period of time after the advent of written history dating to the time of first Euro-American contact in an area.

Hydraulic Gradient. The change in head with a change in distance in a given direction (head is the pressure on a fluid at a given point).

Hydrocarbons (HC). Any of a vast family of compounds containing hydrogen and carbon. Used loosely to include many organic compounds in various combinations; most fossil fuels are composed predominantly of hydrocarbons. When hydrocarbons mix with nitrogen oxides in the presence of sunlight, ozone is formed; hydrocarbons in the atmosphere contribute to the formation of ozone.

Impact. An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using a qualitative and nominally subjective technique. In this Environmental Impact Statement, as well as in the CEQ regulations, the word impact is used synonymously with the word effect.

Indirect Impacts. Program-related impacts (usually population changes and resulting impacts) not directly attributable to the program itself.

Infrastructure. The basic installations and facilities on which the continuance and growth of a community, state, etc., depend, e.g., roads, schools, power plants, transportation systems, and communication systems.

Intermittent Stream. A stream that flows part of the time, such as during the wet season.

Interstate. The designated National System of Interstate and Defense Highways located in both rural and urban areas; they connect the East and West coasts and extend from points on the Canadian border to various points on the Mexican border.

Kilowatt. A unit of power equivalent to 1,000 watts.

Land Use Plans and Policies. Guidelines adopted by governments to direct future land use within their jurisdictions.

Lead (Pb). A heavy metal used in many industries, which can accumulate in the body and cause a variety of negative effects. One of the six pollutants for which there is a National Ambient Air Quality Standard. See Criteria Pollutants.

L_{eq} Noise Level. The equivalent steady state sound level which, in a stated period of time, would contain the same acoustical energy as time-varying sound level during the same period.

Level of Service (LOS). In transportation analyses, a qualitative measure describing operational conditions within a traffic stream and how they are perceived by motorists and/or passengers. In public services, a measure describing the amount of public services (e.g., fire protection and law enforcement services) available to community residents, generally expressed as the number of personnel providing the services per 1,000 population.

Liquefaction Susceptibility. Potential for fluidization and loss of mechanical strength of saturated soils during an earthquake.

Loam, Loamy. Rich, permeable soil composed of a mixture of clay, silt, sand, and organic matter.

Loudness. The qualitative judgment of intensity of sound by humans.

Marl. An earthy substance composed mostly of lime mud with some clay.

Megawatt. One thousand kilowatts or 1,000,000 watts.

Microgram. One-millionth of a gram.

Military Operating Area. Airspace areas of defined vertical and lateral limits established for the purpose of separating certain training activities, such as air combat maneuvers, air intercepts, and acrobatics, from other air traffic operating under instrument flight rules.

Military Training Route. Airspace of defined vertical and lateral dimensions established for the conduct of military flight training at airspeeds in excess of 250 knots.

Mineral. Naturally occurring inorganic element or compound.

Mineral Resources. Mineral deposits that may eventually become available, known deposits not recoverable at present or yet undiscovered.

Miocene. An epoch of geological time dating from 24 to 5 million years ago.

Mitigation. A method or action to reduce or eliminate program impacts.

Multiple Family Housing. Townhouse or apartment units that accommodate more than one family though each dwelling unit is only occupied by one household.

National Ambient Air Quality Standards (NAAQS). Section 109 of the Clean Air Act requires EPA to set nationwide standards, the National Ambient Air Quality Standards, for widespread air pollutants. Currently, six pollutants are regulated by primary and secondary NAAQS: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (PM_{10}), and sulfur dioxide. See Criteria Pollutants.

National Environmental Policy Act (NEPA). Public Law 91-190, passed by Congress in 1969. The Act established a national policy designed to encourage consideration of the influences of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the Council on Environmental Quality. NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues to facilitate the decision-making process.

National Priority List. A list of sites (federal and state) that contain hazardous materials that may cause an unreasonable risk to the health and safety of individuals, property, or the environment.

National Register of Historic Places. A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.

Native Americans. Used in a collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contact.

Native Vegetation. Plant life that occurs naturally in an area without agricultural or cultivational efforts. It does not include species that have been introduced from other geographical areas and become naturalized.

Natural Levee. A ridge along a streambank formed of sediment deposited in times of bank overflow.

Nitrogen Dioxide (NO_2). Gas formed primarily from atmospheric nitrogen and oxygen when combustion takes place at high temperature. NO_2 emissions contribute to acid deposition and formation of atmosphere ozone. One of the six pollutants for which there is a National Ambient Air Quality Standard. See Criteria Pollutants.

Nitrogen Oxides (NO_x). Gases formed primarily by fuel combustion, which contribute to the formation of acid rain. Hydrocarbons and nitrogen oxides combine in the presence of sunlight to form ozone, a major constituent of smog.

Noise. Any sound that is undesirable because it interferes with speech and hearing, or is intense encugh to damage hearing, or is otherwise annoying (unwanted sound).

Noise Attenuation. The reduction of a noise level from a source by such means as distance, ground effects, or shielding.

Noise Contour. A curve connecting points of equal noise exposure on a map. Noise exposure is often expressed using the average day-night sound level, DNL.

Nonattainment Area. An area that has been designated by the Environmental Protection Agency or the appropriate state air quality agency as exceeding one or more National or State Ambient Air Quality Standards.

Normal Fault. A type of fault in which beds on one side of the fault have slipped down and away from beds on the other side.

Outmigration. The act of leaving one region or community to settle in another.

Ozone (ground level). A major ingredient of smog. Ozone is produced from reactions of hydrocarbons and nitrogen oxides in the presence of sunlight and heat. Some 68 areas, mostly metropolitan areas, did not meet a 31 December 1987 deadline in the Clean Air Act for attaining the ambient air quality standard for ozone.

Paleoindian. Prehistoric hunter-gatherer populations characterized by efficient adaptations to terminal Pleistocene environments in which small bands exploited megafauna such as mammoth (app. 10,000 - 6000 B.C.).

Paleontological Resources. Fossilized organic remains from past geological periods.

Palustrine. The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 hectares (20 acres); (2) active wave formation or bedrock shoreline features lacking; (3) water depth in the deepest part of the basin less than 2 meters at low water; and (4) salinity due to ocean-derived salts less than 0.5 percent.

Parish. A civil division of the State of Louisiana corresponding to a county in other states.

Passenger Car Equivalent. The number of passenger cars that are displaced by a single heavy vehicle of a particular type under prevailing roadway, traffic, and control conditions.

Peak Demand. The highest instantaneous amount of electrical power (in kilowatts) that an electrical system is required to supply over a given time frame, usually 1 year.

Peak Hour. The hour of highest traffic volume on a given section of roadway between 7 A.M. and 9 A.M. or between 4 P.M. and 6 P.M.

Peak Year. The year when a particular program-related effect is greatest.

Perched Water. Groundwater separated from an underlying main body of groundwater by an unsaturated zone.

Perennial Stream. A stream that flows all the time.

Permeability. The capacity of a porous rock or sediment to transmit a fluid.

Pesticides. Any substance, organic or inorganic, used to destroy or inhibit the action of plant or animal pests; the term thus includes insecticides, herbicides, fungicides, rodenticides, miticides, fumigants, and repellants. All pesticides are toxic to humans to a greater or lesser degree. Pesticides vary in biodegradability.

pH. A measure of the acidity or alkalinity of a material, expressed as the negative exponent of the hydrogen ion concentration.

Physiographic Province. A region in which all parts are similar in geologic structure and climate.

PicoCurie. One trillionth of a Curie, the unit used to measure radioactivity.

Pitchblende. A mineral formed by radioactive decay, often found in sulfide bearing veins.

Pleistocene. An earlier epoch of the Quaternary period during the "Ice Age" beginning approximately 3 million years ago and ending 10,000 years ago. Also refers to the rocks and sediments deposited during that time.

Plume. An elongated mass of contaminated fluid moving with the flow of the fluid.

Polychlorinated Biphenyl (PCBs). Any of a family of industrial compounds produced by chlorination of biphenyls. These compounds accumulate in organisms and concentrate in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.

Polychlorinated Biphenyl-Contaminated Equipment. Equipment which contains a concentration of PCBs from 50 to 499 ppm and regulated by the EPA.

Polychlorinated Biphenyl Equipment. Equipment which contains a concentration of PCBs of 500 ppm or greater and regulated by the EPA.

Potable Water. Water suitable for drinking.

Prehistoric. The period of time before the written record.

Prevention of Significant Deterioration (PSD). In the 1977 Amendments to the Clean Air Act, Congress mandated that areas with air cleaner than required by National Ambient Air Quality Standards must be protected from significant deterioration. The Clean Air Act's PSD program consists of two elements: requirements for best available control technology on major new or modified sources, and compliance with an air quality increment system.

Prevention of Significant Deterioration Area. A requirement of the Clean Air Act (160 et seq.) that limits the increases in ambient air pollutant concentrations in clean air areas to certain increments even though ambient air quality standards are met.

Primary Roads. A consolidated system of connected main roads important to regional, statewide, and interstate travel; they consist of rural arterial routes and their extensions into and through urban areas of 5,000 or more population.

Prime Farmland. Environmentally significant agricultural lands protected from irreversible conversion to other uses.

Protohistoric. The period when Native American cultures were affected by Euro-Americans without direct contact. For instance, inland Indian tribes received trade goods and reports of European cultures from coastal tribes before the arrival of European explorers in the interior.

Pumpage. A quantity of water removed by pumping expressed as a rate or total amount.

Quartz. Monzonite (basement corplex), coarse-grained igneous rock containing quartz, feldspar, and mafic minerals.

Raptors. Birds of prey.

Recent. The time period from approximately 10,000 years ago to the present and the rocks and sediments deposited during that time.

Recharge. The process by which water is absorbed and added to the zone of saturation, either directly into a formation or indirectly by way of another formation.

Restricted Area. Designated airspace in which aircraft activity, while not prohibited, is subject to certain restrictions.

Riparian. Of or relating to land lying immediately adjacent to a river or stream, and having specific *characteristics of that transitional area* (*e.g., riparian* vegetation).

Riverine. The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and (2) habitats with water containing ocean-derived salts in excess of 0.5 percent.

Ruderal. Weedy or introduced vegetation growing in disturbed areas.

Runoff. The noninfiltrating water entering a stream or other conveyance channel shortly after a rainfall event.

Salt Dome. A mass of salt that has worked its way into and up through sedimentary rock layers; common in the Gulf Coast area.

Satellite Accumulation Point. An area where up to 55 gallons of hazardous waste and up to 1 quart of acutely hazardous waste can be accumulated indefinitely. Containers with excess waste must be marked with the date the excess began accumulating and removed from the area within 3 days to a permitted storage area or to an accumulation point.

Secondary Employment. In economics, the additional employment and income generated by the economic activity required to produce the inputs to meet the initial material requirements. The term often is used to include induced effects.

Sediment. Material deposited by wind or water.

Sedimentary. Rock formed by mechanical, chemical, or organic sediments such as rock formed of fragments transported from their source and deposited elsewhere by water (e.g., sandstone or shale).

Seismic. Pertains to the characteristics of an earthquake or earth vibrations including those that are artificially induced.

Seismicity. Relative frequency and distribution of earthquakes.

Shrink/Swell Potential. Volume change possible upon wetting or drying.

Sheetwash. Sheet erosion; the removal of a fairly uniform layer of soil from the land surface by runoff water.

Significance. The importance of a given impact on a specific resource as defined under the Council on Environmental Quality regulations.

Single-Family Housing. A conventionally built house consisting of a single dwelling unit occupied by one household.

Site. As it relates to cultural resources, any location where humans have altered the terrain or discarded artifacts.

Sludge. A heavy, slimy deposit, sediment, or mass resulting from industrial activity; solids removed from wastewater.

Soil Association. A collection of soils found to geographically occur together.

Soil Series. A group of soils having similar parent materials, genetic horizons, and arrangement in the soil profile.

Solvent. A substance that dissolves or can dissolve another substance.

Sound. The auditory sensation evoked by the compression and rarefaction of the air or other transmitting medium.

Special Use Airspace. Airspace restricted from commercial and private use.

Specific Plan. A plan regulating development within a defined area of a city, consistent with the city's General Plan. Specific plans are required prior to development in specified areas that have not been zoned for particular land uses.

State Historic Preservation Officer. The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the National Historic Preservation Act.

State-Sensitive/State-Recognized Species. Plant and animal species in each state that are monitored and listed for purposes of protection.

Sulfur Dioxide (SO_2). A toxic gas that is produced when fossil fuels, such as coal and oil, are burned. SO_2 is the main pollutant involved in the formation of acid rain. SO_2 also can irritate the upper respiratory tract and cause lung damage. During 1980, some 27 million tons of sulfur dioxide were emitted in the United States, according the Office of Technology Assessment. The major source of SO_2 in the United States is coal-burning electric utilities.

Tectonic. Pertaining to large-scale structural features or movements of large portions of the earth's crust.

Tectonic Framework. Structural elements of a region including the rising, stable, and subsiding areas.

Terrace. A bench-like feature composed of sediment of an old floodplain and formed as a stream renews its downcutting and leaves the old deposits elevated and approximately parallel to the present floodplain.

Terrestrial. Living on or in, or growing from, the land.

Therm. A measurement of units of heat.

Threatened Species. A plant or animal species likely to become endangered in the foreseeable future.

Toluene. Liquid aromatic hydrocarbon used as a solvent.

Total Dissolved Solids. The concentration of solid materials that are dissolved in a sample of water; determined as the weight of the residue of a water sample upon filtration and evaporation divided by the volume of the sample.

Total Suspended Particulates (TSP). The particulate matter in the ambient air. The previous National Ambient Air Quality Standard for particulates was based on TSP levels; it was replaced in 1987 by an ambient standard based on PM_{10} levels.

Total Water Use. The amount of water withdrawn from the natural resource base for a beneficial purpose, excluding water used for hydroelectric power generation and certain nonconsumptive uses, such as once-through cooling water for thermoelectric power generation, wildlife habitat, and fish farming.

Traffic Assignment. The allocation of traffic flows among routes available between any two places.

Transmissivity. A quantitative measure of the amount of water that can move through a groundwater reservoir. It depends on permeability, hydraulic gradient, and thickness of the reservoir.

Trichloroethylene (TCE). An organic solvent used in dry cleaning and in the removal of grease from metal.

Trip Distribution. A determination of the interchange of trips among zones in the region.

Trip Generation. A determination of the quantity of trip ends associated with a parcel of land.

Turbid. Cloudy (as applied to water) with sediment or other solids.

Unconfined Aquifer. An aquifer where the water table is exposed to the atmosphere through openings (pores) in the overlying materials.

Understory. An underlying layer of low vegetation.

Unemployment Rate. The number of civilians, as a percentage of the total civilian labor force, without jobs but actively seeking employment.

Unified Soil Classification System. A rapid method for identifying and grouping soils for military construction. Soils are grouped by grain-size, gradation, and liquid limit.

Unique and Sensitive Habitats. Areas that are especially important to regional wildlife populations or protected species that have other important biological characteristics (e.g., severe wintering habitats, nesting areas, and wetlands).

Upland. Ground elevated above bottomlands (e.g., rolling hill terrain and terraces).

Volume (Transportation). The total number of vehicles that pass over a given point or section of a roadway during a given time interval. Volumes may be expressed in terms of annual, daily, hourly, or subhourly periods.

Watershed. An area consisting of a surface water drainage basin and the divides that separate it from adjacent basins.

Water Table. The *sustainable volume of water discharged from a well per units of time, often* expressed in gallons per minute.

Watt. A unit of electrical power equal to 1/756th horsepower.

Wetlands. Areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil. This classification includes swamps, marshes, bogs, and similar areas.

Vehicle Trip End. A one-direction vehicle movement with either the origin and/or the destination or both inside the study site.

Volume. The number of vehicles passing a point on a lane, roadway, or other trafficway during some time interval.

Zoning. The division of a municipality (or county) into districts for the purpose of regulating land use, types of building, required yards, necessary off-street parking, and other prerequisites to development. Zones are generally shown on a map and the text of the zoning ordinance specifies requirements for each zoning category.

ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
ACBM	Asbestos Containing Building Material
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
ADT	Average Daily Traffic
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFR	Air Force Regulation
AHERA	Asbestos Hazard Emergency Response Act
AICUZ	Air Installation Compatible Use Zone
ALP	Airport Layout Plan
ANSI	American National Standards Institute
APE	Area of Potential Effect
APZ	Accident Potential Zone
AQCR	Air Quality Control Region
ARAR	Applicable or Relevant and Appropriate Requirements
ARTCC	Air Route Traffic Control Center
ASA	Atlantic Southeast
ATC	Air Traffic Control
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CLECO	Central Louisiana Electric Company
COE	U.S. Army Corps of Engineers
CUD	Compatible Use District
DBCRA	Defense Base Closure and Realignment Act
DEIS	Draft Environmental Impact Statement
DEQPPM	Defense Environmental Quality Program Policy Memorandum
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DOT	Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EDMS	Emissions and Dispersion Modeling System
EEIDD	England Economic and Industrial Development District
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEIS	Final Environmental Impact Statement
FFA	Federal Facilities Agreement
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
FPMR	Federal Property Management Regulations
FY	Fiscal Year
GSA	General Services Administration
HARM	Hazard Assessment Rating Methodology
HHS	Department of Health and Human Services
HMTA	Hazardous Materials Transportation Act
HSWA	Hazardous and Solid Waste Amendments of 1984
HUD	U.S. Department of Housing and Urban Development
ID(M)	Infantry Division (Mechanized)
IFR	Instrument Flight Rules

ILS	Instrument Landing System
INM	Integrated Noise Model
IRP	Installation Restoration Program
ISB	Intermediate Staging Base
JP-4	Jet Petroleum (Grade 4)
JRTC	Joint Readiness Training Center
LAAQS	Louisiana Ambient Air Quality Standards
LEPA	Louisiana Energy and Power Authority
LOS	Level of Service
MCL	Maximum Contaminant Level
MOA	Military Operating Area
Mogas	Automotive Gasoline
MSL	Mean Sea Level
MTR	Military Training Routes
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NCP	National Contingency Plan
NEPA	National Environmental Policy Act of 1969
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NLR	Noise Level Reduction
NOI	Notice of Intent
NOISEMAP	Noise Exposure Model
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OB/OD	Open Burn/Open Detonation
OL	Operating Location
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
P.L.	Public Law
POL	Petroleum, Oil, and Lubricants
PSD	Prevention of Significant Deterioration
RA	Remedial Action
RAMP	Radon Assessment and Mitigation Program
R&D	research and development
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
ROI	Region of Influence
RPZ	Runway Protection Zone
SARA	Superfund Amendments and Reauthorization Act
SATO	Scheduled Airlines Traffic Office
SCS	Soil Conservation Service
SEL	Sound Exposure Level
SHPO	State Historic Preservation Officer
SI	Site Inspection
SIAS	Socioeconomic Impact Analysis Study
SMB	Separate Motorized Brigade

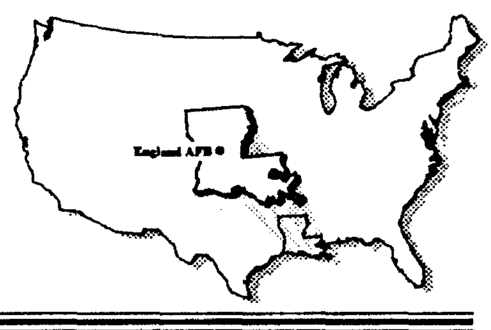
TAC	Tactical Air Command
TD	Technology Development
TFW	Tactical Fighter Wing
TRACON	Terminal Radar Approach Control Facility
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, and Disposal Facilities
TSP	Total Suspended Particulates
USC	*United States Code*
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VFR	Visual Flight Rules
VOC	Volatile Organic Compounds

UNITS OF MEASUREMENT

°C	degrees Celsius
cy	cubic yard
dB	decibel
dBA	decibel measured on the A-weighted scale
DNL	day-night average noise level
gpd	gallons per day
gpd/ft^2	gallons per day per square foot
kWh	kilowatt-hour
L_{eq}	energy-equivalent continuous noise level
L_{max}	maximum instantaneous sound level
MG	million gallons
MGD	million gallons per day
mg/l	milligrams per liter
MMcf	million cubic feet
mph	miles per hour
MW	megawatt
pCi/l	picoCuries per liter
PM_{10}	particulate matter less than or equal to 10 micrometers in diameter
ppm	parts per million
μg/l	micrograms per liter
$\mu g/m^3$	micrograms per cubic meter
μm	micrometer

CHEMICAL ABBREVIATIONS

CO	carbon monoxide
CO^2	carbon dioxide
HC	hydrocarbons
O_3	ozone
NO_x	nitrogen oxide
NO_2	nitrogen dioxide
Pb	lead
PCB	polychlorinated biphenyls
SO_x	sulfur oxides
SO_2	sulfur dioxide
TCE	trichloroethylene



APPENDIX B

APPENDIX B

NOTICE OF INTENT

The following Notice of Intent (NOI), published in the *Federal Register* on October 9, 1991, provided public notice of the Air Force's intent to prepare an Environmental Impact Statement on the disposal and reuse of England Air Force Base. The NOI has been retyped for clarity and legibility.

NOTICE OF INTENT
TO PREPARE ENVIRONMENTAL IMPACT STATEMENTS
FOR DISPOSAL AND REUSE OF THIRTEEN AIR FORCE BASES

The United States Air Force will prepare thirteen environmental impact statements (EISs) to assess the potential environmental impacts of disposal and reuse of the following Air Force bases recently directed to be closed under the provisions of the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, Title XXIX):

Closing Base

Bergstrom AFB, Austin, Texas

Carswell AFB, Fort Worth, Texas

Castle AFB, Merced, California

Eaker AFB, Blytheville, Arkansas

England AFB, Alexandria, Louisiana

Grissom AFB, Peru, Indiana

Loring AFB, Limestone, Maine

Lowry AFB, Denver, Colorado

Myrtle Beach AFB, Myrtle Beach, South Carolina

Richards Gebaur AFS, Kansas City, Missouri

Rickenbacker AFB, Columbus, Ohio

Williams AFB, Chandler, Arizona

Wurtsmith AFB, Oscoda, Michigan

Each EIS will address the disposal of the property to public or private entities and the potential impacts of reuse alternatives. All available property will be disposed of in accordance with provisions of Public Law 101-510 and applicable federal property disposal regulations.

The Air Force plans to conduct a scoping and screening meeting within the local area for each base during October and November 1991. Notice of the time and place of each meeting will be made available to public officials and local news media outlets once it has been finalized. The purpose of each meeting is to determine the environmental issues and concerns to be analyzed for the base disposal and reuse in that area, to solicit comments on the proposed action and to solicit proposed disposal and reuse alternatives that should be addressed in the EIS for that base. In soliciting disposal and reuse inputs, the Air Force intends to consider all reasonable alternatives offered by any federal, state, or local government agency and any federally-sponsored or private entity or individual with an interest in acquiring available property at one of the listed closing bases. The resulting environmental impacts will be considered in making disposal decisions to be documented in the Air Force's final disposal plan for each base.

To ensure the Air Force will have sufficient time to consider public inputs on issues to be included in the EISs, and disposal alternatives to be included in the final disposal plans, comments and reuse proposals should be forwarded to the address listed below by December 1, 1991. However, the Air Force will accept comments at the address below at any time during the environmental impact analysis process.

For further information concerning the study of these base disposal and reuse EIS activities, contact:

Lt. Colonel Tom Bartol
AFCEE/ESE
Norton AFB, California 92409-6448

Note: Comment date was extended from December 1, 1991 to January 2, 1992 after processing and publication of this Notice of Intent.

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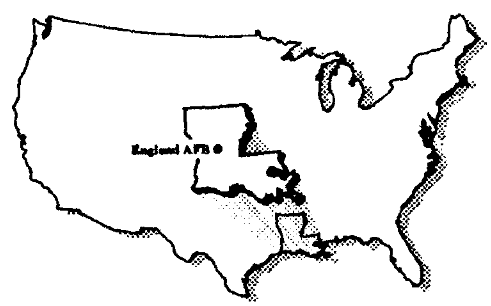

APPENDIX C

APPENDIX C

FINAL ENVIRONMENTAL IMPACT STATEMENT MAILING LIST

This list of recipients includes federal, state, and local agencies and individuals who have expressed an interest in receiving the document. This list also includes the Governor of Louisiana, as well as United States senators and representatives and state legislators.

ELECTED OFFICIALS

Federal Officials

U.S. Senate

Honorable John Breaux
Honorable J. Bennett Johnston

U.S. House of Representatives

Honorable Clyde Holloway

State of Louisiana Officials

Governor

Honorable Edwin W. Edwards

State Legislature

State Senate

Honorable James D. Cain
Honorable Donald G. Kelly
Honorable Joe McPherson
Honorable Steve Thompson

State Assembly

Honorable Isreal Curtis
Honorable Charlie DeWitt
Honorable Rick Farrar
Honorable Stephen Gunn
Honorable Jimmy Long
Honorable John Smith

Local Officials

City of Alexandria

Edward G. Randolph, Jr., Mayor
Johnny Downs, City Council President
John E. Allen, Jr., City Councilman
Butch Crenshaw, City Councilman
Robert L. Lawrence, City Councilman
Debbie Mahfouz, City Councilwoman
W.T. Moreau, City Councilman
Charles E. Smith, Jr., City Councilman

City of Pineville

Fred Baden, Mayor
Lee J. Broussard, Alderman
Lemon Coleman, Jr., Alderman
Chris Cunningham, Alderman
Roy Malone, Jr., Alderman
Jack Wainwright, Alderman

Rapides Parish Police Jury

John Christopher, President
Richard W. Billings
Steve P Bordelon
Joe Fuller
Opal M. Hudson
Clyde D. Linzay, Jr.
Richard L. Nunnally
Scott Perry, Jr.
Donald H. Wilmore

GOVERNMENT AGENCIES

Federal Agencies

Administrative Services and Property Management
Office of the Secretary of Transportation
Deputy Director
Washington, DC

Advisory Council on Historic Preservation
Washington, DC

Center for Environmental Health/Injury Control
Special Programs Group (F29)
Centers for Disease Control
Atlanta, GA

Council of Economic Advisors
Washington, DC

Department of Agriculture
Forest Service
Environmental Coordination Office
Washington, DC

Department of Commerce
Director, Economic Adjustment Division
Economic Development Administration
Washington, DC

Department of Commerce
Director, Office of Intergovernmental Affairs
Washington, DC

Department of Education
Assistant to the Deputy Under Secretary for Intergovernmental and Interagency Affairs
Washington, DC

Department of Energy
Division of Intergovernmental Affairs (CP-23)
Washington, DC

Department of Health and Human Services
Office of Human Development Services
Washington, DC

Department of Housing and Urban Development
Director, Community Management Division (CPD)
Washington, DC

Department of the Interior
Director, Office of Environmental Affairs
Washington, DC

Farmers Home Administration
Deputy Administrator for Program Operations
Washington, DC

Federal Aviation Administration
Director, Office of Environment and Energy
Washington, DC

General Services Administration
Assistant Commissioner
Office of Real Estate Policy and Sales (FPRS)
Washington, DC

Small Business Administration
Director, Office of Procurement,
Policy and Liaison
Washington, DC

Thomas Fleming
General Services Administration
Office of Program Initiatives
Washington, DC

Debra Hood
Department of Justice
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Allen Maurer
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Bryant J. Monroe
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Dr. Robert M. Rauner, Director
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Intergovernmental Affairs
Washington, DC

Federal Agencies - Regional

AFCEE/ESD
Dallas, TX

Department of Housing and Urban Development
Forth Worth Regional Office
Regional Environmental Officer
Fort Worth, TX

Environmental Protection Agency
Regional EIS Coordinator (6ES-F)
Dallas, TX

Federal Aviation Administration
Southwest Region
Airports Division
Forth Worth, TX

General Services Administration
Planning Staff - 7PL
Fort Worth, TX

Craig Blair
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John C. McCarthy
Farmers Home Administration
Alexandria, LA

Richard Murray
Army Corps of Engineers, Fort Worth District
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Fish and Wildlife Service, Region 4
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U.S. Army 5th ID(M)/DEH
Fort Polk, LA

Norm Thomas
Environmental Protection Agency, Region 6
Federal Activities Branch
Dallas, TX

Louisiana State Agencies

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Baton Rouge, LA

Dr. Wilmer S. Cody
Education Department
Baton Rouge, LA

James Courcier
Louisiana Department of Environmental Quality
Lafayette, LA

Tommy Doran
Louisiana Department of Environmental Quality
Inactive and Abandoned Sites Division
Baton Rouge, LA

Jonathan Fricker
Cultural Development Office
Historic Preservation Division
Baton Rouge, LA

Gary L. Keyser
Lands and Natural Resources Division
Baton Rouge, LA

W. Edwin Martin
State Historic Preservation Officer
Department of Culture, Recreation and Tourism
Baton Rouge, LA

Walter Fox McKeithen
Secretary of State
Baton Rouge, LA

Joel Nitzkin
Public Health Services Office
New Orleans, LA

Maureen O'Neil
Environmental Quality Department
Water Resources Division
Baton Rouge, LA

Bob Odom
Agriculture and Forestry Department
Baton Rouge, LA

Harold Price
Economic Development Department
Commerce and Industry Office
Baton Rouge, LA

Edward Rhorer
Mineral Resources Office
Baton Rouge, LA

Richard Ryan
Public Information Officer
Secretary of State, Public Information Division
Baton Rouge, LA

Larry Smith
Corrections Services
Baton Rouge, LA

Major General Ansel M. Stroud
State Adjutant General
Headquarters Building
New Orleans, LA

Dr. Paul H. Templet
Environmental Quality Department
Baton Rouge, LA

Neil L. Wagoner
Transportation and Development Department
Baton Rouge, LA

Dan Wigley
Administrator
Contracts and Grants Division
Office of Environmental Affairs
Baton Rouge, LA

Local Government Agencies/Organizations

City of Alexandria

Charles Carruth, Fire Chief

A.E. "Sonny" Craig, Director
Utilities Division

Brian Funderburk, Director
Finance Division

Jon Grafton, City Clerk

Charles F. Nunnally III, City Attorney

Lester Pourciau, Director
Personnel Department

Brenda Ray, Director
Community Development Department

John Ritchie, Chief of Police

Dennis Story, Director
Planning Department

K. Darrell Williamson, Director
Public Works Division and
Chief Administrative Officer

England Economic and Industrial Development District (England Authority)

James L. Meyer, Chairman
George Thompson, Vice Chairman
John Brewer, Commissioner
Henry B. Bruser, III, Commissioner
R. Gene Cotton, Commissioner
Jack DeWitt, Commissioner
Barry D. Hines, Commissioner
Susan Jaques, Commissioner
Garland R. Lawrence, Commissioner
Myron K. Lawson, Commissioner
James Holderread, Executive Director

Rapides Parish

Jack DeWitt, Parish Administrator
Rapides Parish Police Jury
Alexandria, LA

William Earl Hinton, Parish Sheriff
Rapides Parish Sheriff's Department
Alexandria, LA

Douglas A. Jenkins, President
Rapides Parish School Board
Alexandria, LA

John Miller, Executive Director
Rapides Area Planning Commission
Alexandria, LA

Jerry M. Thiels, Secretary/Treasurer
Rapides Parish Airport Authority
Pineville, LA

Other Organizations/Individuals

Exchange Club of Alexandria
Alexandria, LA

Louisiana Wildlife Federation
Baton Rouge, LA

Optimist Club of Downtown Alexandria
Alexandria, LA

Rotary Club of Alexandria
Alexandria, LA

Shrine Club
Alexandria, LA

Wildlife Society
Southeastern Section
Starkville, MS

Larry Acosta
Co-Chairman
England Air Force Base Committee
Alexandria, LA

Trienel Ahearn
LABAT ANDERSON, INC.
Arlington, VA

Dede Armentrout
National Audubon Society
Southwest Region
Austin, TX

Sonny Bindursky
Vice-President, Military Affairs Committee
Alexandria, LA

Bruce O. Capps
Greiner Consultant Team
Alexandria, LA

Marion Chaney, President
Central Louisiana Chamber of Commerce
Alexandria, LA

Gene Faulkner
Greiner, Inc.
Fort Worth, TX

Bill Gates
Rotary Club of Pineville
Alexandria, LA

David Huffman, Jr.
Kiwanis Club of Pineville
Alexandria, LA

Alvin Mykoff
Co-Chairman
England Air Force Base Committee
Alexandria, LA

B. A. Pittman
Kiwanis Club of Central Louisiana
Alexandria, LA

Elton Pody
Executive Director
Central Louisiana Chamber of Commerce
Alexandria, LA

Jim Price
Sierra Club
Southeast Regional Office
Birmingham, AL

Jeff Raymond
LABAT ANDERSON, INC.
Environmental Science and Policy
(Omaha Office)
Bellevue, NE

Hazel Rou
Professional Women's Network
Alexandria, LA

P. D. Stewart
South Alexandria Rotary
Alexandria, LA

James Ward
BNA Plus
Washington, DC

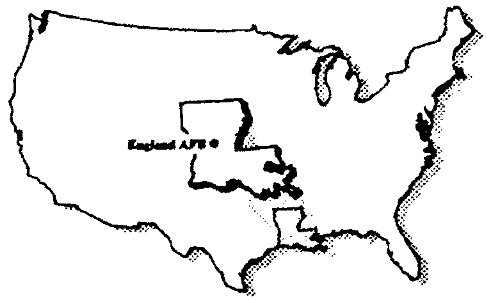
Libraries

Louisiana College Library
Pineville, LA

Louisiana State Library
Baton Rouge, LA

Louisiana State University at Alexandria
James C. Bolton Library
Alexandria, LA

Rapides Parish Library
Alexandria, LA



APPENDIX D

APPENDIX D

ENGLAND AIR FORCE BASE INSTALLATION RESTORATION PROGRAM BIBLIOGRAPHY

Engineering-Science

1983 *Installation Restoration Program, Phase I - Records Search, England AFB, Louisiana.* Prepared for U.S. Air Force Tactical Air Command, Directorate of Engineering and Environmental Planning, Langley Air Force Base, Virginia.

Radian Corporation

1985 *Installation Restoration Program Phase II - Confirmation/Quantification, Stage I, Final Report for England AFB, Louisiana.* Prepared for U.S. Air Force Occupational and Environmental Health Laboratory, Brooks Air Force Base, Texas.

Walk, Haydel, & Associates, Inc.

1989a *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Addendum Report, England AFB, Louisiana, Volume I, Sites SP-3: Underground JP-4 Line Leak; SP-7: Motor Pool Underground Tank Leak.* Prepared for Headquarters Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1989b *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, England AFB, Louisiana, Fire Training Drum Storage Site No. 1.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1989c *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, England AFB, Louisiana, Volume I, Sites FT-1: Fire Training Site No. 1; SP-3: Underground JP-4 Line Leak; SP-4: Underground JP-4 Line Leak; SP-5: Underground JP-4 Line Leak; SP-6: CE Tank Spill; SP-7: Motor Pool Underground Tank Leak.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1989d *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, England AFB, Louisiana, Volume II, Sites FT-1: Fire Training Site No. 1; SP-3: Underground JP-4 Line Leak; SP-4: Underground JP-4 Line Leak; SP-5: Underground JP-4 Line Leak; SP-6: CE Tank Spill; SP-7: Motor Pool Underground Tank Leak.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1990a *Final Installation Restoration Program Phase IV-A, Environmental Assessment, England Air Force Base, Louisiana, Site D-15, POL Sludge Weathering Pit.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1990b *Final Installation Restoration Program Phase IV-A, Remedial Action Plan and Conceptual Documents, England AFB, Louisiana, Site D-15, POL Sludge Weathering Pit.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1990c *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Addendum Report, Volume I, England AFB, Louisiana, Sites SP-3: Underground JP-4 Line Leak; SP-7: Motor Pool Underground Tank Leak.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1990d *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Addendum Report, Volume II, England AFB, Louisiana, Sites SP-3: Underground JP-4 Line Leak; SP-7: Motor Pool Underground Tank Leak.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1991a *Comprehensive Environmental Response, Compensation, and Liability Act Preliminary Assessment/Site Investigation, Chemical Data Acquisition Plan, England Air Force Base, Louisiana, Site SS-24 (Formerly Site FTDS-2), Fire Training Drum Storage Area.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DERV, Langley Air Force Base, Virginia.

1991b *Final Comprehensive Environmental Response, Compensation, and Liability Act Remedial Investigation, Chemical Data Acquisition Plan, England Air Force Base, Louisiana, Site SS-21 (Formerly Site BFSA-1): Bulk Fuel Storage Area.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1991c *Final Installation Restoration Program, Feasibility Study Report, England AFB, Louisiana, Site ST-6: Underground JP-4 Line Leak (Formerly Site SP-3).* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1991d *Final Installation Restoration Program Feasibility Study, Feasibility Study Report, England AFB, Louisiana, Volume I, Site ST-18: Motor Pool Underground Tank Leak (Formerly Site SP-7).* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEVR, Langley Air Force Base, Virginia.

1991e *Final Installation Restoration Program Feasibility Study, Feasibility Study Report, England AFB, Louisiana, Volume II, Site ST-18: Motor Pool Underground Tank Leak (Formerly Site SP-7).* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEVR, Langley Air Force Base, Virginia.

1992a *Final Installation Restoration Program, Preliminary Assessment/Site Inspection Report, England Air Force Base, Louisiana, Site SS-24: Fire Training Drum Storage Area, Volume I (with Appendices A-D).* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1992b *Final Installation Restoration Program, Preliminary Assessment/Site Inspection Report, England Air Force Base, Louisiana, Site SS-24: Fire Training Drum Storage Area, Volume II (with Appendix E - Analytical Data).* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEEV, Langley Air Force Base, Virginia.

1992c *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, Volume II, England Air Force Base, Louisiana, Site SS-21: Petroleum, Oil, and Lubricant Area.* Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEVR, Langley Air Force Base, Virginia.

1992d *Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, Volume III, England Air Force Base, Louisiana, Site SS-21: Petroleum, Oil, and Lubricant Area*. Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEVR, Langley Air Force Base, Virginia.

1992e *Installation Restoration Program, Draft Feasibility Study Report, England Air Force Base, Louisiana, Site SS-21: Petroleum, Oil, and Lubricant Area*. Prepared for Headquarters, Tactical Air Command, HQ,TAC/DEVR, Langley Air Force Base, Virginia.

1992f *Revised Final Installation Restoration Program Remedial Investigation, Remedial Investigation Report, Volume I, England Air Force Base, Louisiana, Site SS-21: Petroleum, Oil, and Lubricant Area*. Prepared for Headquarters, Tactical Air Command, HQ, TAC/DEVR, Langley Air Force Base, Virginia.

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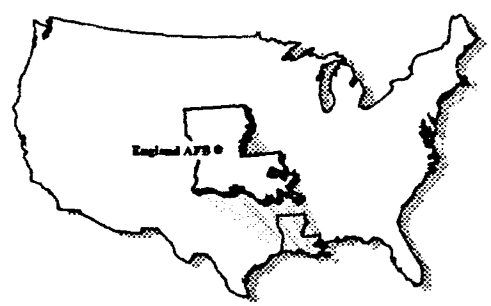

APPENDIX E

APPENDIX E

METHODS OF ANALYSIS

1.0 INTRODUCTION

This section describes the methods used in preparing this Environmental Impact Statement (EIS). These methods were designed and implemented to evaluate the potential environmental impacts of disposal of England Air Force Base (AFB), Louisiana, and incident reuse. Because future reuse of the site is uncertain in its scope, activities, and timing, several alternative reuse scenarios were considered in the analysis and their associated environmental impacts were evaluated. The reuse scenarios analyzed in this EIS were defined for this study to span the anticipated range of reuse activities that are reasonably likely to occur as a result of disposal of the base. They were developed based on proposals put forth by the local community, interested individuals, and the Air Force, and considered general land use planning objectives.

The various analysis methods used to develop this EIS are summarized here by resource. In some instances, more detail is included in another appendix. These instances are noted for each resource in its respective subsection below.

2.0 LOCAL COMMUNITY

2.1 COMMUNITY SETTING

The community setting section provides the context within which impacts on the biophysical environment were assessed. Community setting effects were based on projected direct and secondary employment and resulting population changes related to the reuse of England AFB. These projections were used to quantify and evaluate changes in demands on community services and transportation systems. A complete assessment of socioeconomic effects was conducted through a separate *Socioeconomic Impact Analysis Study (SIAS), Disposal and Reuse of England Air Force Base, Louisiana* (U.S. Air Force 1992e), which is the source for baseline and projected statistics used in this EIS.

Information used in the SIAS was obtained from various sources, including the U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Council of Economic Advisors, Louisiana Department of Employment and Training, Rapides Area Planning Commission, Rapides Parish, and the cities of Alexandria and Pineville. The Regional Interindustry Multiplier System (RIMS II) model was used to generate demographic and economic projections used to analyze changes that would result from the Proposed Action and alternatives.

2.2 LAND USE AND AESTHETICS

Potential land use impacts were projected based on compatibility of land uses associated with the Proposed Action and alternatives with adjacent land uses and zoning; consistency with general plans and other land use plans, regulations, regional plans, and policies; and effects of aircraft noise and safety restrictions on land uses.

The Region of Influence (ROI) for the majority of direct land use impacts for this study consists of England AFB and adjacent land in the City of Alexandria and unincorporated portions of Rapides Parish. Noise-related land use impacts were determined by the extent of noise contours created by the various reuse alternatives.

Maps and windshield surveys were used to characterize on and offbase land uses. Applicable policies, regulations, and land use restrictions were identified from the land use plans and ordinances of municipalities in the ROI. The proposed and alternative reuse plans were compared to existing land use and zoning to identify areas of conflict, as well as to local planning goals and objectives set forth in the *Alexandria 2010: A Comprehensive Development Strategy* (RM Plan Group 1992).

Alternatives incorporating airfield uses were examined for consistency with Federal Aviation Administration (FAA) regulations and recommended land uses in the vicinity of airfields. Impacts of airfield-generated noise were assessed by comparing the extent of noise-affected areas and receptors under different reuse alternatives against preclosure baseline conditions.

For the aesthetics analysis, the affected environment was described based on the visual sensitivity of areas within and visible from the base. These areas were categorized as high, medium, or low sensitivity. The Proposed Action and alternatives were then evaluated to identify land uses to be developed, visual modifications that would occur, new areas of visual sensitivity, and whether modification of unique or otherwise irreplaceable visual resources would occur and detract from the visual qualities or setting.

2.3 TRANSPORTATION

The analysis of potential impacts to transportation resulting from the Proposed Action and alternative reuse plans for England AFB focused on key roads, local airport use, and passenger rail service in the area, including those segments of the transportation networks in the region that serve as direct or mandatory indirect linkages to the base, and those that are commonly used by England AFB personnel. The need for improvements to onbase roads, offbase access, and regional arterials was considered. The analysis used information from state and local government agencies, including the Louisiana Department of Transportation and Development and Rapides Parish Planning Commission; local airport authorities; and railroad companies. Other data sources used for the roadway analysis include the Institute of Transportation Engineers and the Transportation Research Board. The ROI for the transportation analysis includes the existing principal road, air, and rail networks in Rapides Parish. The commercial airport in the Alexandria/Pineville area is Alexandria Esler Regional Airport, 13 miles northeast of Alexandria. The commercial airport ROI extends to the entire central Louisiana region.

The number of vehicle trips expected as a result of specific land uses on the site was estimated for 1993, 1998, 2003, and 2013 based on direct onsite jobs and other attributes of onsite land uses (such as the number of dwelling units, projected airport passenger volume, commercial and industrial development, and other factors). Trip generation data from the Institute of Transportation Engineers were used to determine vehicle trips. Vehicle trips were then allocated to the local road network using prior patterns and expected destinations and sources of trips. When appropriate, the local road network was adjusted to account for changes over time from presently planned road capacity improvements and improvements required by the proposed reuse scenarios. Changes in work and associated travel patterns were derived by assigning or removing traffic to or from the most direct commuting routes. Changes in traffic volumes arising from reuse alternatives at England AFB were estimated. Resulting volume changes on key local, regional, and onbase roadway segments were then determined.

The transportation network in the ROI was then examined to identify potential impacts to levels of service (LOS) arising from future baseline conditions (caretaker status of England AFB) and effects of reuse alternatives. Planning computations from the *Highway Capacity Manual* (Transportation Research Board 1985) were used to determine the number of lanes required to provide for a given LOS. The planning application provided estimates of traffic and anticipated LOS where the amount of detail and accuracy of information were limited. The planning procedures used in this analysis were based on projections of average annual daily traffic and on assumed traffic, roadway, and control conditions. The results provided a basic assessment of whether or not capacity was likely to be exceeded for a given volume. Intersection analysis was then integrated into the planning capacity analysis for each roadway section analyzed. The results provided an estimate of the changes in LOS ratings expected as a result of traffic volume changes on key local, regional, and onbase roadway segments.

Airspace use in the vicinity of an airport is driven primarily by factors such as runway alignment, surrounding obstacles and terrain, air traffic control and navigational aid capabilities, proximity of other airports/airspace uses in the area, and noise considerations. These same factors normally apply regardless of whether the airport is used for military or civil aircraft operations. For this reason, a preclosure reference was used in characterizing these factors related to airspace use at England AFB.

Historic data on military aircraft operations used to characterize airspace use at and in the vicinity of England AFB were obtained from the base. The Rapides Parish Airport Authority and airport owners/operators were contacted to obtain information on civil airport use. Aviation forecasts were derived from the reuse plans and Rapides Parish Airport Authority studies. Where necessary, assumptions were made based on other similar airport operational environments.

The airspace ROI for England AFB is shown in Chapter 3.0, Figure 3.2-10. Air traffic control for military and civil aircraft operating in the vicinity of England AFB is provided by Alexandria Approach Control and Houston Air Route Traffic Control Center (ARTCC). Alexandria Approach Control is an Air Force-operated facility at England AFB and provides radar coverage for all aircraft from the surface to 10,000 feet mean sea level for a radius of 60 miles, excluding certain Special Use Airspace areas. Air traffic above 10,000 feet mean sea level is controlled by Houston ARTCC.

The types and levels of aircraft operations projected for the Proposed Action and General Aviation Alternative were evaluated and compared to the way airspace was configured and used under the preclosure reference. The capacity of the airport to accommodate the projected aircraft fleet and operations was assessed by calculating the airport service volume, using the criteria in FAA Advisory Circular 150/5060-5. Potential effects on airspace use were assessed, based on the extent to which projected operations could (1) require modifications to the airspace structure or air traffic control systems and/or facilities; (2) restrict, limit, or otherwise delay other air traffic in the region; or (3) encroach on other airspace areas and uses.

It was recognized throughout the analysis process that a more in-depth study would be conducted by the FAA, once a reuse plan is selected, to identify any impacts of the reuse activities and any actions that would be required to support the projected aircraft operations. Therefore, this analysis was used only to consider the level of operations that could likely be accommodated under the existing airspace structure, and to identify potential impacts if operational capacities were exceeded.

Data addressing private, passenger, and air cargo service in the region were acquired directly from representatives of airports serving the area and air transportation studies of the area. The effect of base closure on local airports was derived by subtracting current base-related enplanements from current total enplanements. For each reuse alternative, impacts on air transportation were determined by multiplying the ratio of enplanements to population by the projected future populations of the local airport service areas.

Information regarding existing rail transportation was obtained from AMTRAK and railroad companies serving the region. Projected effects of reuse alternatives on railroad transportation were based on the anticipated use of these railroads for freight service. Impacts on passenger service were not specifically addressed because of the distance (over 80 miles) to the nearest AMTRAK station.

2.4 UTILITIES

Utility demands were determined based on proposed land uses and projected area population increases. The utility systems addressed in this analysis include the facilities and infrastructure used for potable water (pumping, treatment, storage, and distribution), wastewater (collection and treatment), solid waste (collection and disposal), and energy generation and distribution (electricity and natural gas). Historic consumption data, service curtailment data, peak demand characteristics, storage and distribution capacities, and related information for base utilities (including projections of future utility demand for each utility provider's particular service area) were extracted from various city utility departments, utility companies, and the England AFB Civil Engineering Squadron. Information was also obtained from public and private utility purveyors and related parish and city agencies.

The ROI for this analysis comprises the service areas of the local purveyors of potable water, wastewater treatment, and energy that serve England AFB and the surrounding area. It was assumed that these local purveyors would provide services within the area of the existing base after disposal.

Potential impacts were evaluated based on demand projections obtained from various utility purveyors in the region (through 2013) for each of their respective service areas. For each utility, recent projections that were made prior to the base closure announcement or those that did not take into account a change in demand from the base were considered. These projections were adjusted to reflect the decrease in demand associated with closure of England AFB and its subsequent operation under caretaker status. These adjusted forecasts were used as the future baseline for comparison with potential reuse alternatives.

The potential effects of reuse alternatives were evaluated by estimating and comparing the additional direct and indirect demand associated with each reuse alternative to the existing and projected operating capabilities of each utility system. Estimates of direct utility demands on the site were used to identify the effects of the reuse activities on site-related utility systems. All changes to the utility purveyors' long-term forecasts were based on estimated project-related population changes in the region and the future rates of per capita demand indicated by the projections or derived from those projections. It was assumed that the per-capita demand rates were representative of the reuse activities, based on assumed similarities between proposed land uses and existing or projected uses in the region. Utility projections include direct demand associated with activities planned on base property, as well as resulting changes in domestic demand associated with population changes in the region.

3.0 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Two categories of hazardous materials and hazardous waste management were addressed in this analysis: (1) impacts of hazardous materials utilized and hazardous waste generated with each reuse proposal, and (2) residual impacts associated with past Air Force practices including delays resulting from Installation Restoration Program (IRP) site remediation. IRP sites are identified as part of the affected environment (Chapter 3.0), while remediation impacts associated with these sites are addressed as environmental consequences (Chapter 4.0). Impacts resulting from waste generated by each reuse proposal are also addressed in Chapter 4.0. Primary sources of data included existing published reports such as IRP documents, generators' annual hazardous waste reports, various hazardous materials and waste management plans (e.g., spill response, hazardous waste, underground storage tanks, asbestos), recent inventories (e.g., the Entomology Shop pesticide inventory), and survey results (e.g., hazardous waste, asbestos, and radon). Pertinent federal, state, and local regulations and standards were reviewed for applicability to the Proposed Action and alternatives. Hazardous materials and waste management plans and inventories were obtained from England AFB. Information needed to fill any data gaps was obtained through interviews with personnel associated with these onbase organizations.

The ROI includes the current base property and all geographical areas that have been affected by an onbase release of a hazardous material or a hazardous waste. The IRP sites are located within the base boundary. There is no evidence that groundwater contamination extends beyond the base boundary.

Preclosure baseline conditions (i.e., when the base was fully operational), as defined for this study, include hazardous materials/waste management practices and inventories pertaining to the following areas: hazardous materials, hazardous waste, IRP sites, aboveground and underground storage tanks, oil/water separators, asbestos, pesticides, polychlorinated biphenyls (PCBs), radon, and medical/biohazardous waste. The impact analysis considers (1) the amount and type of hazardous materials/waste currently associated with specific facilities and/or areas proposed under each reuse alternative; (2) the regulatory requirements or restrictions associated with property transfer and reuse; (3) delays to development resulting from IRP remediation activities; and (4) remediation schedules of specific hazardous materials/waste (i.e., PCBs, medical/biohazardous waste) currently used by the Air Force.

4.0 NATURAL ENVIRONMENT

4.1 SOILS AND GEOLOGY

The evaluation of impacts to soils addressed erosion potential, construction-related dust generation and other soils problems (e.g., low soil strength, expansive soils, etc.), and disturbance of unique soil types. Information was obtained from various federal, state, and local agencies. Assessment of potential impacts to geology from the reuse alternatives included evaluation of resource potential, including aggregates, geologic hazards (particularly, the potential for seismicity, liquefaction, and subsidence), and flooding potential.

The ROI for the soils analysis is limited to the base and specific areas designated for construction or renovation. The ROI for the geology analysis includes the region surrounding England AFB relative to topography, seismic activity, aggregate resources, and flooding potential.

The soils analysis was based on information from the *Soil Survey of Rapides Parish, Louisiana* (U.S. Department of Agriculture, Soil Conservation Service and U.S. Forest Service 1980). The soils in the ROI were evaluated for such factors as erosion potential, permeability, evidence of hardpans, and expansive soil characteristics, as these relate to construction problems and erosion potential during construction. Mitigations were evaluated based on local requirements and Soil Conservation Service recommendations. Common engineering practices were reviewed to determine poor soil characteristics and to recommend mitigation measures.

The geology analysis was based on a review of existing literature for construction problems associated with geologic hazards, availability of construction aggregate, and whether reuse would affect the availability of known mineral resources.

4.2 WATER RESOURCES

Analysis of impacts of the reuse alternatives on water resources considered groundwater quality and quantity, surface water quality (effects from erosion or sedimentation and contamination), surface water drainage diversion, and nonpoint source surface runoff to the adjacent bayous. Impacts to water quality resulting from IRP activities are addressed in Hazardous Materials and Hazardous Waste Management section. Information was obtained from various federal, state, and local agencies. The ROI for water resources includes the groundwater basin underlying the base, the surface drainage directly affected by runoff from the base, and the 100-year floodplains of the bayous in the vicinity of the base.

Existing surface water conditions were evaluated for flood potential, nonpoint source discharge or transportation of contaminants, and surface water quality. Groundwater resources were evaluated as they pertained to adequate water supplies for each of the reuse alternatives. Groundwater quality and the potential as a potable water source for each reuse alternative were documented. The existing stormwater drainage system was evaluated based on available literature, and the impacts to this system with each of the reuse alternatives were analyzed.

4.3 AIR QUALITY

Air quality is defined as the condition of the atmosphere, expressed in terms of the concentrations of air pollutants occurring in an area, as the result of emissions from natural and/or man-made sources. Reuse alternatives have the potential to affect air quality depending on net changes in the release of both gaseous and particulate matter emissions. The impact significance of these emission changes was determined by comparing the resulting atmospheric concentrations to state and federal ambient air quality standards. This analysis was based on local climatological data, air quality monitoring data, baseline emission inventory information, construction scheduling information, project-related source information, and transportation data. Principal sources of these data were the Environmental Protection Agency, Louisiana Department of Environmental Quality, and England AFB.

The ROI was determined by emissions from sources associated with construction and operation of the disposal/reuse alternatives. For inert pollutant emissions (all pollutants other than ozone and its precursors), the measurable ROI is limited to a few miles downwind from the source (i.e., the immediate area of England AFB). The ROI for ozone impacts from project emissions is Rapides Parish.

Emissions predicted to result from the proposed reuse alternatives were compared to existing baseline emissions to determine the potential for adverse air quality impacts. Impacts were also assessed by modeling, where appropriate, and compared to air quality standards and attainment levels for complying with these standards. Appendix I contains the projected emissions inventory information and methods. Background concentrations were added to the project impacts for comparison with the standards and attainment levels. Impacts were considered significant if project emissions would (1) increase an offsite ambient pollutant concentration from below to above a federal or state standard; (2) contribute a measurable amount to an existing or projected air quality standard exceedance; or (3) expose sensitive receptors (such as schools or hospitals) to substantial pollutant concentrations. All other air quality impacts were considered not significant.

4.4 NOISE

The noise analysis addresses potential impacts from reuse-generated aircraft operations, surface traffic, and other identified noise sources on areas surrounding England AFB. Most of the data were obtained from the aircraft operations and traffic data prepared for the reuse alternatives. Day-night levels (DNL) were used to determine noise impacts. A single-event noise analysis using sound exposure levels (SEL) was also performed. Scientific literature on noise effects was also referenced.

The ROI for noise is the area within DNL 65-decibel (dB) contours based on land use compatibility guidelines developed from FAA regulations (U.S. Department of Transportation, Federal Aviation Administration 1989). The ROI for surface traffic noise impacts incorporated key road segments identified in the transportation analysis.

Noise levels from aircraft operations were estimated using the FAA-approved Noise Exposure Model (NOISEMAP), version 6.0 (Moulton 1990). Noise contours for DNL 65 dB and above were depicted. Increased noise levels resulting from surface traffic were estimated using the Federal Highway Administration's highway noise model (1978). Potential noise impacts were identified by overlaying the noise contours with land use and population information to determine the number of residents who would be exposed to DNLs above 65 dB.

SELs related to reuse alternatives were determined for representative noise-sensitive receptors exposed to aircraft noise from the England AFB airfield. The SELs are outdoor levels and take into account the location of the receptors relative to the various flight tracks and aircraft profiles used. However, evaluation of sensitive receptors relative to noise reduction levels of specific structures was not performed.

Methods used to analyze noise impacts under each reuse scenario are presented in detail in Appendix H of this EIS.

4.5 BIOLOGICAL RESOURCES

Biological resources analyzed for disposal and reuse of England AFB include vegetation, wildlife, threatened and endangered species, and sensitive habitats (e.g., wetlands). Primary data sources for the analysis included published literature and reports, field reconnaissance of the base, and contacts with agencies such as the U.S. Fish and Wildlife Service and the Louisiana Natural History Program. The ROI for the biological resources assessment comprises England AFB, adjacent natural areas, and other areas potentially affected by reuse alternatives.

Vegetation, wildlife, and sensitive biological resources (e.g., wetlands and protected species) on the base were mapped using aerial photographs and field observations obtained during a reconnaissance survey of the base in February 1992. Wetlands on the base were mapped from the National Wetland Inventory map for the Boyce, Louisiana, U.S. Geological Survey 15-minute quadrangle. Sensitivity of wetlands present on the base was based on correspondence from the U.S. Army Corps of Engineers (1990).

The impact analysis was performed by overlaying project land use maps for each alternative onto the biological resource maps to calculate the overlap by land use category. Based on the timing of development in the 20-year study period and the type of development proposed (e.g., new construction or reuse of existing facilities) for each land use, the amount of habitat that could be affected was estimated. The proportion of disturbance associated with each land use category was determined based on accepted land use planning concepts. It was assumed that disturbance could occur at one or more sites within the land use polygon, unless designated as vacant land on the project maps. Disturbance of each habitat type present was considered to be in direct proportion to the development factor.

These impacts were further divided into three development phases by visually comparing maps showing the proposed schedule of development with the resource maps. All other impacts were qualitatively assessed based on literature data and scientific expertise on the responses of plants and animals to project-related disturbances such as noise, landscaping, and vegetation maintenance.

4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

Cultural resources include three main categories: prehistoric resources, historic resources, and Native American (traditional) resources. Paleontological resources are the fossil evidence of past plant and animal life. Prehistoric resources are physical properties resulting from human activities predating written records, identified as either isolated artifacts or sites. Sites contain concentrations of artifacts (e.g., stone tools and ceramic sherds), features (e.g., hearths), and plant and animal remains. Depending on their age, complexity, integrity, and relationship to one another, sites may be important and capable of yielding information about past populations and adaptive strategies.

Historic resources consist of physical properties that postdate the existence of written records and include architectural structures (e.g., log cabins, dams, and bridges) and archaeological features such as foundations, trails, and trash dumps. Such resources may have research potential in the same manner as prehistoric sites, but historic sites are more often considered important because of their association with important historical persons or events, or as examples of distinctive architectural styles.

Native American (traditional) resources include sites, areas, and materials important to Native Americans for religious or heritage reasons. Sensitive resources may include some types of prehistoric sites, features and artifacts, contemporary sacred areas, traditional use areas (e.g., native plant habitat), and sources for materials used in the production of sacred objects and traditional tools.

Cultural resources of particular concern include properties listed on the National Register of Historic Places (NRHP), properties potentially eligible for the NRHP, and sensitive Native American sites and areas.

Paleontological resources are the physical remains, impressions, or traces of plants or animals from a former geological age. They include casts, molds, and trace fossils such as burrows or tracks. Fossil localities typically include surface outcrops, areas where subsurface deposits are exposed, and special environments favoring preservation, such as caves, peat bogs, and tar pits.

Paleontological resources are important mainly for their potential to provide scientific information on the evolutionary history of plants and animals and paleoenvironments.

Data used to compile information on these resources were obtained from existing environmental documents; material on file at England AFB; recent cultural resource correspondence pertaining to the base; interviews with individuals familiar with the history, archaeology, or paleontology of the Alexandria, Louisiana, area; and records of the Louisiana State Historic Preservation Office (SHPO). The ROI for cultural resources includes all areas within the boundaries of England AFB. No offbase areas were included except where ground-disturbing activities (such as road widening) are part of potential reuse plans.

The EIS contains the most up-to-date information on the importance of cultural resources on England AFB, based on recent and ongoing evaluation of eligibility for the NRHP. Cultural resources for which eligibility information was unavailable were assumed to be eligible for the National Register, as is stipulated in the National Historic Preservation Act (NHPA).

According to National Register criteria (36 CFR 60.4), the quality of significance is present in districts, sites, buildings, structures, and objects that:

a) Are associated with events that have made a significant contribution to the broad patterns of history

b) Are associated with the lives of persons significant in the past

c) Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction

d) Have yielded, or may be likely to yield, information important in prehistory or history.

To be listed in or considered eligible for listing on the National Register, a cultural resource must meet at least one of the above criteria and must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. Integrity is defined as the authenticity of a property's historic identity, as evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric occupation or use. If a resource retains the physical characteristics it possessed in the past, it has the capacity to convey information about a culture or people, historical patterns, or architectural or engineering design and technology.

Compliance with requirements of cultural resource laws and regulations ideally involves four basic steps: (1) identification of significant cultural resources that could be affected by the Proposed Action or its alternatives, (2) assessment of the impacts or effects of these actions, (3) determination of significance of potential historic properties within the ROI, and (4) development and implementation of measures to eliminate or reduce adverse impacts. The primary law governing cultural resources in terms of their treatment in an environmental analysis is the NHPA, which addresses the protection of historic and cultural properties. In compliance with the NHPA, the Air Force is in the process of consultation with the SHPO, as required under Section 106 of the Act.

Adverse effects that may occur as a result of base reuse are those that have a negative impact on characteristics that make a resource eligible for listing on the NRHP. Actions that can diminish the integrity, research potential, or other important characteristics of an historic property include the following (36 CFR 800.9):

- Physical destruction, damage, or alteration of all or part of the property
- Isolating the property from its setting or altering the character of the property's setting when that character contributes to the property's qualification for the National Register
- Introduction of visual or auditory elements that are out of character with the property or that alter its setting
- Transfer or sale of a federally owned property without adequate conditions or restrictions regarding its preservation, maintenance, or use
- Neglect of a property, resulting in its deterioration or destruction.

Regulations for implementing Section 106 of the NHPA indicate that the transfer, conveyance, lease, or sale of an historic property is procedurally considered to be an adverse effect, thereby ensuring full regulatory consideration in federal project planning and execution. However, effects of a project that would otherwise be found to be adverse may not be considered adverse if one of the following conditions exists:

- When the historic property is of value only for its potential contribution to archaeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines
- When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historical and architectural value of the affected historic property through conformance with the Secretary's Standards for Rehabilitation and Guidelines for Rehabilitation of Historic Buildings

- When the undertaking is limited to the transfer, conveyance, lease, or sale of an historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant historic features.

The treatment of paleontological resources is governed by Public Law 74-292 (the National Natural Landmarks Program, implemented by 36 CFR 62). Only paleontological remains determined to be scientifically important are subject to consideration and protection by a federal agency. Among the criteria used for National Natural Landmark designation are illustrative character, present condition, diversity, rarity, and value for science and education. Additional criteria developed by the National Research Council (1987) indicate that paleontological resources are of high research potential and therefore of scientific or educational value if they are:

- Recovered in poorly studied regions or in unusual concentrations;

- Poorly known fossil forms;

- Assemblages containing a variety of fossil forms, particularly associations of vertebrates, invertebrates, and plants;

- Well-preserved terrestrial vertebrates; and

- In usual depositional contexts.

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APPENDIX F

APPENDIX F

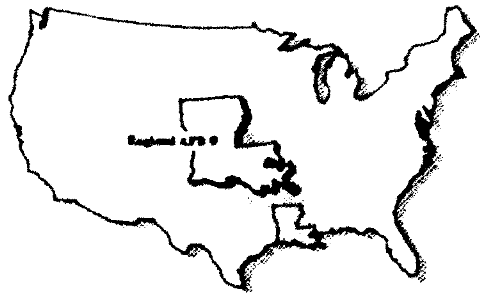
CURRENT PERMITS

Table F-1

England AFB Permits

Permit No.	Permitted Facility/Equipment	Original Date Issued	Issuing Agency	Date of Expiration	Comments/Conditions
LA9572124452	Hazardous Waste Treatment, Storage, and Disposal Facility (TSD) (23 CSG/CC Building 1912)	October 30, 1991	Louisiana Department of Environmental Quality and the U.S. Environmental Protection Agency	October 30, 2001	A Resource Conservation and Recovery Act (RCRA) Part B Permit for operation of the Defense Reutilization and Marketing Office (DRMO) facility as a permitted container storage area for up to 3,000 gallons of hazardous waste.
Wastewater Discharge Permit 3-1992	Outfall 001; Interceptor Line Feeding the Upper Lift Station, City of Alexandria Collection System	January 1, 1992	City of Alexandria	December 31, 1992	A permit authorizing the discharge of industrial wastewater from England AFB through Outfall 001 into the City of Alexandria sewer system.
2360-01-891	Burney the Burner 100-Pound per Hour Incinerator, Model "Firedrake," U.S. Air Force Hospital, England AFB	November 12, 1989	Louisiana Department of Environmental Quality	Not specified	A permit for the operation of the hospital incinerator within the limits set forth in the Louisiana Administrative Code, Title 33, Part III, Sections 1101 and 1319 in particular.
Operational and Security Plan for Construction/ Demolition Debris Site E-079-3242	Construction/ Demolition Debris Site E-079-3242	August 22, 1991	Louisiana Department of Environmental Quality	Not specified	Plan for receipt, handling, and disposal of construction and demolition debris, land clearing wastes, and woodwaste in three landfill facilities in accordance with Louisiana Administrative Code, Title 33, Part VII.

Sources: Louisiana Department of Environmental Quality 1991; U.S. Air Force 1991c; City of Alexandria 1991d.



APPENDIX G

APPENDIX G

AIR FORCE POLICY ON MANAGEMENT OF ASBESTOS AT CLOSING BASES

INTRODUCTION

Asbestos in building facilities is managed because of potential adverse human health effects. Asbestos must be removed or controlled if it is in a location and condition that constitutes a health hazard or a potential health hazard or it is otherwise required by law (e.g., schools). The hazard determination must be made by a health professional (in the case of the Air Force, a Bioenvironmental Engineer) trained to make such determinations. While removal is a remedy, in many cases management alternatives (such as encapsulation within the building) are acceptable and cost effective methods of dealing with asbestos. The keys to dealing with asbestos are knowing its location and condition and having a management plan to prevent asbestos containing materials that continue to serve their intended purpose from becoming a health hazard. There is no alternative to such management, because society does not have the resources to remove and dispose of all asbestos in all buildings in the United States. Most asbestos is not now nor will it become a health hazard if it is properly managed.

There are no laws applicable to closure bases that specifically mandate the removal or management of asbestos in buildings other than the law addressing asbestos in schools (P.L. 99-519). Statutory or regulatory requirements that result in removal or management of asbestos are based on human exposure or the potential for human exposure (i.e. National Emission Standards for Hazardous Air Pollutants (NESHAPS) = no visible emissions, OSHA = number of airborne fibers per cc). There are no statutory or other mandatory standards, criteria, or procedures for deciding what to do with asbestos. Thus, health professional judgement based on exposure levels or potential exposure levels must be the primary determinant of what should be done with asbestos. Apart from this professional and scientific approach, closing bases presents the additional problem of obtaining an economic return to the Government for its property. Asbestos in closing base properties must also be analyzed to determine the most prudent course in terms of removal or remediation cost and the price that can be obtained as a result.

The following specific policies will apply to bases closed or realigned (so that there are excess facilities to be sold) under the base closure laws, P.L. 100-526 and P.L. 101-510.

1. Asbestos will be removed if:

   (a) The protection of human health as determined by the Bioenvironmental Engineer requires removal (e.g., exposed friable asbestos within a building) in accordance with applicable health laws, regulations and standards

   (b) A building is unsalable without removal, or removal prior to sale is cost-effective; that is, the removal cost is low enough compared to value that would be received for a "clean" building that removal is a good investment for the Government. Prior to the decision to remove asbestos solely for economic reasons, an economic analysis will be conducted to determine if demolition, removal of some types of asbestos but not others, or asbestos removal and sale would be in the best interests of the Government.

(c) A building is, or is intended to be, used as a school or child care facility.

2. When asbestos is present but none of the above applies, the asbestos will be managed using commonly accepted standards, criteria and procedures to assure sufficient protection of human health and the environment, in accordance with applicable and developing health standards.

3. A thorough survey for asbestos (including review of facility records, visual inspection, and where appropriate as determined by the Bioenvironmental Engineer and the Base Civil Engineer, intrusive inspection) will be conducted by the air Force prior to sale.

4. Appraisal instructions, advertisements for sale, and deeds will contain accurate descriptions of the types, quantities, locations, and condition of asbestos in any real property to be sold or otherwise transferred outside the Federal Government. Appraisals will indicate what discount the market would apply if the building were to be sold with the asbestos in place.

5. Encapsulated asbestos in a building structure, friable or not, is not regarded as hazardous waste by the Air Force, nor does encapsulation within the structure of a building constitute "storing" or "disposing of" hazardous waste. Asbestos incorporated into a building as part of the structure has not been "stored" or "disposed of."

6. Friable asbestos, or asbestos that will probably become friable, that has been stored or disposed of underground or elsewhere on the property to be sold will be properly disposed of, unless the location is a landfill or other disposal facility property permitted for friable asbestos disposal.

7. The final Air Force determination regarding the disposition of asbestos will be dependent on the plan for disposal and any reuse of the building. Decisions will take into account the proposed community reuse plan and the economic analysis of alternatives (see para 4). The course of action to be followed with respect to asbestos at each closing installation will be analyzed in the Disposal and Reuse Environmental Impact Statement, and will be included in the record of decision (ROD). Any buildings or facilities where the proposed asbestos plan is controversial will be addressed in the ROD, whether individually or as a class of closely related facilities.

8. Since other considerations must be taken into account at bases that are continuing to operate, this policy does not apply to them, nor is it necessarily a precedent for asbestos removal policy on them.

This Air Force Policy on the Management of Asbestos at Closing Bases dated 8 June 1992 has been retyped for the purposes of clarity and legibility.

APPENDIX H

APPENDIX H

NOISE

1.0 DESCRIPTION OF PROPOSED ALTERNATIVES

1.1 PRECLOSURE

Typical noise sources in and around airfields include aircraft, surface traffic, and other human activities.

Military aircraft operations are the primary source of noise in the vicinity of England Air Force Base (AFB). Preclosure noise contours for air operations at the base, from the *Air Installation Compatible Use Zone (AICUZ)* study (U.S. Air Force 1983), are shown in Figure 3.4-5 in Section 3.4.4 of this Environmental Impact Statement (EIS). In airport analyses, areas with a day-night average sound level (DNL) above 65 A-weighted decibels (dBA) are considered in land use compatibility planning and impact assessment; therefore, the distances to areas with DNLs greater than 65 dBA were of particular interest.

Baseline surface traffic noise levels in the vicinity of the base were established in terms of DNL by modeling the arterial roadways in the vicinity of the base using recent traffic and speed characteristics. Annual average daily traffic (AADT) data were developed in the traffic analysis presented in Section 3.2.3, and were used to estimate preclosure noise levels. The traffic data used in the analysis are presented in Table H-1. For the purpose of analysis, the traffic mix was assumed to be 96 percent automobiles, 3 percent medium trucks, and 1 percent heavy trucks. Ten percent of the traffic was assumed to be nighttime (10 p.m.-7 a.m.) traffic. The noise levels generated by surface traffic were predicted using the model published by the Federal Highway Administration (FHWA 1978). The noise levels are estimated as a function of distance from the centerline of the nearest road.

1.2 CLOSURE BASELINE

At closure, it was assumed that there would be no aircraft activity. The noise levels projected for the closure baseline for surface traffic were calculated using the traffic projections at base closure. The AADTs used for the analysis are presented in Table H-1.

1.3 PROPOSED ACTION

The Proposed Action for reuse of England AFB would result in development of an industrial airpark with a regional airport component. Primary components of the aviation proposal include general aviation, air passenger, and air cargo operations. The Proposed Action also includes the use of England AFB as the Intermediate Staging Base (ISB) for the Joint Readiness Training Center (JRTC) as described in Section 2.2. Components of the ISB operation include troop and equipment deployment and helicopter operations. Non-aviation land uses include industrial, commercial, recreational, institutional, and residential.

Table H-1. Preclosure and Closure Surface Traffic Data

Roadway	AADT	Speed Assumed	Road Width Assumed
Preclosure			
State Highway 1 - East of Airbase Road	15,218	55	4
State Highway 28 - West of Vandenberg Drive	4,535	55	2
State Highway 28 - East of Vandenberg Drive	15,022	55	4
State Highway 496 - East of Vandenberg Drive	3,096	35	2
State Highway 498 - East of Airbase Road	3,874	35	2
Closure			
State Highway 1 - East of Airbase Road	9,283	55	4
State Highway 28 - West of Vandenberg Drive	3,945	55	2
State Highway 28 - East of Vandenberg Drive	9,013	55	4
State Highway 496 - East of Vandenberg Drive	2,694	35	2
State Highway 498 - East of Airbase Road	3,409	35	2

The DNL contours for the proposed flight operations and flight tracks modeled with the *Air Force Computer Noise Exposure Model NOISEMAP, Version 6.0* (Moulton 1990), are presented in Section 4.4.4, Noise. The information presented in this section provides the assumptions and background data used to predict the DNL contours for this action.

The fleet mix and annual aircraft operations for each of the modeled years are summarized in Tables H-2a-c. To compute DNL, average daily operations during two time periods, daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.), are considered, with noise from nighttime operations increased by 10 dB. The assumed day-night split and stage (trip) lengths for aircraft operations are presented in Tables H-3 and H-4, respectively.

Based on current scheduled airline operations at Alexandria Esler Regional Airport, air taxi operations were divided into three twin turboprop aircraft types:

- British Aerospace Jetstream 31 (modeled as a DeHavilland Twin Otter DHC-6);
- Saab SF-340; and
- Embraer Brasilia EMB-120 (modeled as a Saab SF-340).

Table H-2a Summary of Annual Aircraft Operations for Proposed Action for Modeled Year 1998

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Passenger (Air Taxi)			11,680	40
British Aerospace Jetstream 31	4,380	38		
Saab SF-340	730	6		
Embraer EMB-120 Brasilia	6,570	56		
Air Cargo			2,190	8
Boeing 727-200	548	25		
McDonnell Douglas MD-82	1,642	75		
General Aviation			8,500	29
Comsep (composite single-engine piston)	5,950	70		
Beech Baron 58P (twin-engine piston)	1,870	22		
Cessna Conquest II (twin-engine turboprop)	510	6		
Cessna Citation I (twin-engine turbojet)	170	2		
Air Passenger (Military Contract)			240	1
Boeing 747-200	240	100		
Military (Fixed Wing)			3,470	12
Boeing C-5A Galaxy	250	7		
Lockheed C-141B Starlifter	20	1		
Lockheed C-130 Hercules	3,200	92		
Military (Helicopter)			3,040	10
UH-1 Iroquois	1,040	34		
UH-60 Blackhawk	820	27		
AH-1 Huey Cobra	364	12		
AH-64 Apache	312	10		
OH-58 Kiowa	304	10		
CH-47 Chinook	120	4		
CH-53 Stallion	80	3		

Table H-2b Summary of Annual Aircraft Operations for Proposed Action for Modeled Year 2003

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Passenger (Air Taxi)			13,140	41
British Aerospace Jetstraam 31	5,110	39		
Saab SF-340	730	6		
Embraer EMB-120 Brasilia	7,300	55		
Air Cargo			2,190	7
Boeing 727-200	0	0		
McDonnell Douglas MD-82	2,190	100		
General Aviation			10,000	31
Comsep (composite single-engine piston)	6,600	66		
Beech Baron 58P (twin-engine piston)	2,300	23		
Cessna Conquest II (twin-engine turboprop)	800	8		
Cessna Citation I (twin-engine turbojet)	300	3		
Air Passenger (Military Contract)			240	1
Boeing 747-200	240	100		
Military (Fixed Wing)			3,470	11
Boeing C-5A Galaxy	250	7		
Lockheed C-141B Starlifter	20	1		
Lockheed C-130 Hercules	3,200	92		
Military (Helicopter)			3,040	9
UH-1 Iroquois	1,040	34		
UH-60 Blackhawk	820	27		
AH-1 Huey Cobra	364	12		
AH-64 Apache	312	10		
OH-58 Kiowa	304	10		
CH-47 Chinook	120	4		
CH-53 Stallion	80	3		

Table H-2c Summary of Annual Aircraft Operations for Proposed Action for Modeled Year 2013

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Passenger (Air Taxi)			15,330	43
British Aerospace Jetstream 31	5,110	35		
Saab SF-340	1,460	10		
Embraer EMB-120 Brasilia	8,760	60		
Air Cargo			2,190	6
Boeing 727-200	0	0		
McDonnell Douglas MD-82	2,190	100		
General Aviation			11,760	32
Comsep (composite single-engine piston)	7,560	63		
Beech Baron 58P (twin-engine piston)	2,880	24		
Cessna Conquest II (twin-engine turboprop)	960	8		
Cessna Citation I (twin-engine turbojet)	360	3		
Air Passenger (Military Contract)			240	1
Boeing 747-200	240	100		
Military (Fixed Wing)			3,470	10
Boeing C-5A Galaxy	250	7		
Lockheed C-141B Starlifter	20	1		
Lockheed C-130 Hercules	3,200	92		
Military (Helicopter)			3,040	8
UH-1 Iroquois	1,040	34		
UH-60 Blackhawk	820	27		
AH-1 Huey Cobra	364	12		
AH-64 Apache	312	10		
OH-58 Kiowa	304	10		
CH-47 Chinook	120	4		
CH-53 Stallion	80	3		

Table H-3 Day-Night Split of Aircraft Operations for Proposed Action and Alternatives

Aircraft Type	Percent Daytime	Percent Nighttime
Air Passenger (Air Taxi)	90	10
General Aviation	95	5
Air Cargo	70	30
Air Passenger (Military Contract) (B-747)	100	0
Military Fixed Wing (C-5/C-141)	100	0
Military Fixed Wing (C-130)	70	30
Military (Helicopters)	82	18

Notes: Daytime: 0700 to 2200 hours.
Nighttime: 2200 to 0700 hours.

Table H-4 Stage (Trip) Lengths Assumed for Aircraft Operations for Proposed Action and Alternatives[1]

Group	1998	2003	2013
Air Passenger (Air Taxi)	1	1	1
General Aviation	1	1	1
Air Cargo	2	2	2
Air Passenger (Military Contract) (B-747)	5[2]	5[2]	5[2]
Military Fixed Wing (C-5/C-141)	-[3]	-[3]	-[3]
Military Fixed Wing (C-130)	-[3]	-[3]	-[3]
Military (Helicopter)	-[3]	-[3]	-[3]

Notes: [1]Stage (trip) length may affect operational parameters such as takeoff or landing profiles, engine thrust settings, and aircraft speed of some aircraft; these parameters may, in turn, affect aircraft noise exposure. Stage lengths correspond to the distance flown in increments of 500 miles (e.g., stage length 1 corresponds to flights between 1 and 500 miles; 2 corresponds to flights between 500 and 1,000 miles, etc.). The maximum stage length used in modeling is 7 (>4,500 miles).
[2]Stage length 5 assumed for B-747. Stage length will vary depending on location of rotational training group airlifted to the JRTC ISB.
[3]Stage length generally not applicable for military aircraft. Standard departure profiles assumed for transient military aircraft.

Air cargo operations were assumed to consist of 25 percent (noise) Stage 2 aircraft and 75 percent Stage 3 aircraft for modeled year 1998 and 100 percent Stage 3 aircraft for modeled years 2003 and 2013. Stage 2 air cargo aircraft were represented by the B-727-200 aircraft type and Stage 3 aircraft were represented by the MD-82 aircraft type. The phaseout of Stage 2 aircraft is in accordance with recent Federal Aviation Administration (FAA) guidelines.

General aviation operations were divided into four aircraft types:

- Single-engine propeller - A composite single-engine propeller plane (COMSEP) was assumed;

- Multi-engine propeller - Beech Baron 58P;

- Turboprop - Cessna Conquest II; and

- Turbofan - Cessna Citation I.

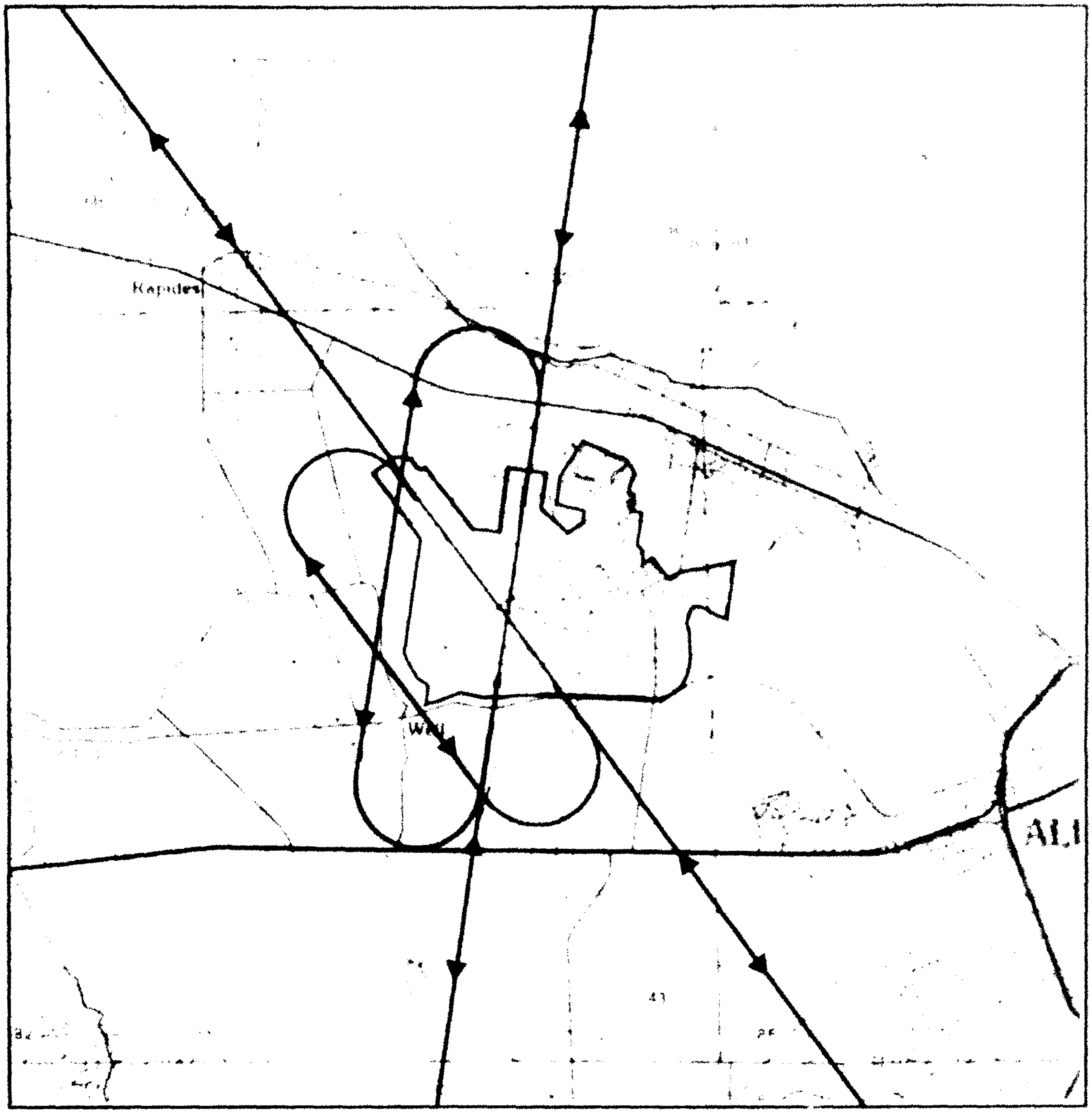
Military operations for the JRTC ISB exercises were divided into airlift deployment and strategic deployment categories. The airlift deployment category included the following aircraft: Boeing C-5A Galaxy, Lockheed C-141B Starlifter, Lockheed C-130 Hercules, and commercial Boeing 747-200 under military contract. The following helicopters were included in the strategic deployment category:

- UH-1 Iroquois
- UH-60 Blackhawk
- AH-1 Huey Cobra
- AH-64 Apache
- OH-58 Kiowa
- CH-47 Vertol
- CH-53 Stallion

Straight arrival and departure tracks and closed-loop touch-and-go tracks were used in the modeling and are shown in Figure H-1. Average daily operations assigned to each flight track (by percent) and time period for the Proposed Action are provided in Table H-5a-c for each of the modeled years.

Standard arrival and departure profiles and reference noise data for all civilian aircraft, including the B-747, were provided by the FAA's Integrated Noise Model (INM) data base Version 3.9 (U.S. Department of Transportation, Federal Aviation Administration 1982) and were incorporated into the NOISEMAP computer model. Standard arrival and departure profiles and reference noise data for the C-5A Galaxy, C-141B Starlifter, and C-130 Hercules provided by the NOISEMAP computer noise model data base Version 6.0 were used in the analysis.

Touch-and-go profiles for propeller-driven general aviation aircraft were assumed to consist of the standard departure profile for the first half of the track (50% of the total closed-loop length) and the standard arrival profile for the second half of the track. It was assumed that the aircraft would be able to use the closed-loop patterns in either direction (i.e., takeoff from any runway).



EXPLANATION

Direction of Travel on Flight Path
(Arrival, Departure, and Closed-Loop)

0 1/4 1/2 1 MILES

Flight Tracks - All Aviation Alternatives

Figure H-1

Table H-5a. Assignment of Proposed Action Annual Average Daily Operations for Modeled Year 1998

	Departure Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	Day	Night	Day	Night	Day	Night	Day	Night
B.A. Jetstream 31 (DHC6)	0.41	0.05	0.41	0.05	2.30	0.26	2.30	0.26
Saab SF-340	0.07	0.01	0.07	0.01	0.38	0.04	0.38	0.04
Embraer EMB-120 Brasilia	0.61	0.07	0.61	0.07	3.44	0.38	3.44	0.38
Boeing B727-200	0.26	0.11	0.26	0.11	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	0.79	0.34	0.79	0.34	0.00	0.00	0.00	0.00
COMSEP	0.46	0.02	0.46	0.02	2.63	0.14	2.63	0.14
Beech Baron 58P	0.15	0.01	0.15	0.01	0.83	0.04	0.83	0.04
Cessna Conquest II	0.04	0.00	0.04	0.00	0.23	0.01	0.23	0.01
Cessna Citation I	0.02	0.00	0.02	0.00	0.09	0.00	0.09	0.00
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.25**	**0.61**	**4.25**	**0.61**	**11.00**	**0.87**	**11.00**	**0.87**
	Arrival Flight Tracks							
B.A. Jetstream 31 (DHC6)	0.41	0.05	0.41	0.05	2.30	0.26	2.30	0.26
Saab SF-340	0.07	0.01	0.07	0.01	0.38	0.04	0.38	0.04
Embraer EMB-120 Brasilia	0.61	0.07	0.61	0.07	3.44	0.38	3.44	0.38
Boeing B727-200	0.26	0.11	0.26	0.11	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	0.79	0.34	0.79	0.34	0.00	0.00	0.00	0.00
COMSEP	0.46	0.02	0.46	0.02	2.63	0.14	2.63	0.14
Beech Baron 58P	0.15	0.01	0.15	0.01	0.83	0.04	0.83	0.04
Cessna Conquest II	0.04	0.00	0.04	0.00	0.23	0.01	0.23	0.01
Cessna Citation I	0.02	0.00	0.02	0.00	0.09	0.00	0.09	0.00
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.25**	**0.61**	**4.25**	**0.61**	**11.00**	**0.87**	**11.00**	**0.87**
	Touch-and-Go Flight Tracks							
COMSEP	0.24	0.00	0.24	0.00	1.39	0.00	1.39	0.0
Beech Baron 58P	0.08	0.00	0.08	0.00	0.44	0.00	0.44	0.00
Cessna Conquest II	0.02	0.00	0.02	0.00	0.12	0.00	0.12	0.00
TOTAL:	**0.34**	**0.00**	**0.34**	**0.00**	**1.95**	**0.00**	**1.95**	**0.00**

Table H-5b. Assignment of Proposed Action Annual Average Daily Operations for Modeled Year 2003

	Departure Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	Day	Night	Day	Night	Day	Night	Day	Night
B.A. Jetstream 31 (DHC6)	0.47	0.05	0.47	0.05	2.68	0.30	2.68	0.30
Saab SF-340	0.07	0.01	0.07	0.01	0.38	0.04	0.38	0.04
Embraer EMB-120 Brasilia	0.68	0.08	0.68	0.08	3.83	0.43	3.83	0.43
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
COMSEP	0.52	0.03	0.52	0.03	2.92	0.15	2.92	0.15
Beech Baron 58P	0.18	0.01	0.18	0.01	1.02	0.05	1.02	0.05
Cessna Conquest II	0.06	0.00	0.06	0.00	0.35	0.02	0.35	0.02
Cessna Citation I	0.03	0.00	0.03	0.00	0.17	0.01	0.17	0.01
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.50**	**0.63**	**4.50**	**0.63**	**12.45**	**1.00**	**12.45**	**1.00**
	Arrival Flight Tracks							
B.A. Jetstream 31 (DHC6)	0.47	0.05	0.47	0.05	2.68	0.30	2.68	0.30
Saab SF-340	0.07	0.01	0.07	0.01	0.38	0.04	0.38	0.04
Embraer EMB-120 Brasilia	0.68	0.08	0.68	0.08	3.83	0.43	3.83	0.43
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
COMSEP	0.52	0.03	0.52	0.03	2.92	0.15	2.92	0.15
Beech Baron 58P	0.18	0.01	0.18	0.01	1.02	0.05	1.02	0.05
Cessna Conquest II	0.06	0.00	0.06	0.00	0.35	0.02	0.35	0.02
Cessna Citation I	0.03	0.00	0.03	0.00	0.17	0.01	0.17	0.01
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.50**	**0.63**	**4.50**	**0.63**	**12.45**	**1.00**	**12.45**	**1.00**
	Touch-and-Go Flight Tracks							
COMSEP	0.27	0.00	0.27	0.00	1.54	0.00	1.54	0.00
Beech Baron 58P	0.09	0.00	0.09	0.00	0.54	0.00	0.54	0.00
Cessna Conquest II	0.03	0.00	0.03	0.00	0.19	0.00	0.19	0.00
TOTAL:	**0.39**	**0.00**	**0.39**	**0.00**	**2.27**	**0.00**	**2.27**	**0.00**

Table H-5c. Assignment of Proposed Action Annual Average Daily Operations for Modeled Year 2013

	Departure Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	Day	Night	Day	Night	Day	Night	Day	Night
B.A. Jetstream 31 (DHC6)	0.47	0.05	0.47	0.05	2.68	0.30	2.68	0.30
Saab SF-340	0.14	0.02	0.14	0.02	0.77	0.09	0.77	0.09
Embraer EMB-120 Brasilia	0.81	0.09	0.81	0.09	4.59	0.51	4.59	0.51
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
COMSEP	0.59	0.03	0.59	0.03	3.35	0.18	3.35	0.18
Beech Baron 58P	0.22	0.01	0.22	0.01	1.27	0.07	1.27	0.07
Cessna Conquest II	0.07	0.00	0.07	0.00	0.42	0.02	0.42	0.02
Cessna Citation I	0.04	0.00	0.04	0.00	0.20	0.01	0.20	0.01
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.83**	**0.65**	**4.83**	**0.65**	**14.38**	**1.18**	**14.38**	**1.18**
	Arrival Flight Tracks							
B.A. Jetstream 31 (DHC6)	0.47	0.05	0.47	0.05	2.68	0.30	2.68	0.30
Saab SF-340	0.14	0.02	0.14	0.02	0.77	0.09	0.77	0.09
Embraer EMB-120 Brasilia	0.81	0.09	0.81	0.09	4.59	0.51	4.59	0.51
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
COMSEP	0.59	0.03	0.59	0.03	3.35	0.18	3.35	0.18
Beech Baron 58P	0.22	0.01	0.22	0.01	1.27	0.07	1.27	0.07
Cessna Conquest II	0.07	0.00	0.07	0.00	0.42	0.02	0.42	0.02
Cessna Citation I	0.04	0.00	0.04	0.00	0.20	0.01	0.20	0.01
Boeing C-5A Galaxy	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00
Lockheed C-141B Starlifter	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Lockheed C-130 Hercules	1.10	0.00	1.10	0.00	1.10	0.00	1.10	0.00
Boeing 747-200	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.00
TOTAL:	**4.83**	**0.65**	**4.83**	**0.65**	**14.38**	**1.18**	**14.38**	**1.18**
	Touch-and-Go Flight Tracks							
COMSEP	0.31	0.00	0.31	0.00	1.76	0.00	1.76	0.00
Beech Baron 58P	0.12	0.00	0.12	0.00	0.67	0.00	0.67	0.00
Cessna Conquest II	0.04	0.00	0.04	0.00	0.22	0.00	0.22	0.00
TOTAL:	**0.47**	**0.00**	**0.47**	**0.00**	**2.65**	**0.00**	**2.65**	**0.00**

Because NOISEMAP does not directly support helicopter noise modeling and preliminary calculations demonstrated a relatively minimal impact due to helicopter operations, preliminary calculations were formalized and used as the basis for discussing helicopter noise impacts.

Assumptions that were made for this analysis include the following:

- Because reference noise data were not readily available for the AH-64 (a four-bladed helicopter), reference noise levels for the AH-1 (a two-bladed helicopter) were used because this helicopter is similar physically, except for gross weight and the number of blades on the main rotor. Based on previous helicopter studies, two-bladed helicopters tend to have higher noise levels than higher-bladed helicopters, so this assumption would represent a worst-case scenario for this helicopter.

- Noise calculations were based on level flyover conditions which represent the most typical aircraft altitude of an aircraft's entire flight regime. An altitude of 500 feet above ground level (AGL) was selected as the most probable worst-case altitude for flight safety reasons.

Reference noise data for the UH-1, AH-1G, and OH-58 helicopters were obtained from the Department of the Army (U.S. Army 1978). The reference noise data for the UH-60, CH-47, and CH-53 helicopters were obtained from the FAA Heliport Noise Model (U.S. *Department of Transportation*, Federal Aviation Administration 1988). The analysis is based on the calculated day-night sound level (L_{dn}) of the aircraft under the assumptions presented above. The reference noise data and the calculated L_{dn} values are presented in Table H-6.

Table H-6

Helicopter Noise Contributions

Helicopter	Reference SEL at 500 feet AGL (dB)	L_{dn} (dB)
UH-60	96	54
CH-47	97	47
CH-53	95	43
UH-1	97	56
OH-58	89	43
AH-1G	96	51
AH-64	96	50
	Total Helicopter Contribution:	**60**

Based on this analysis, it was concluded that during the most typical operating regime, the total helicopter noise contributions would not add significantly to the other aircraft contributions.

For modeling, the following parameters were used: an annual average daily temperature of 67°F, a relative humidity of 69 percent, an airfield elevation of 89 feet above mean sea level, and a magnetic declination of 3.6° east.

Surface traffic data used in the modeling were developed in the traffic analysis presented in Section 4.2.3 and are presented in Table H-7.

The DNL contours for the proposed flight operations are shown in Figures 4.4-2 through 4.4-4 in Section 4.4.4 for 1998, 2003, and 2013, respectively. The contours around the northwest/southwest-oriented runway (Runway 14/32) are due primarily to the air cargo operations. The area covered by the contours is reduced for modeled years 2003 and 2013, reflecting the transition from Stage 2 to Stage 3 aircraft by the year 2000.

1.4 GENERAL AVIATION ALTERNATIVE

For the General Aviation Alternative, the airfield would be used only for general aviation and air cargo operations. The airfield layout would remain the same as for the Proposed Action.

The fleet mix and annual aircraft operations for each of the modeled years are summarized in Tables H-8a-c. The aircraft types, day-night split, and stage lengths and source of profiles for the general aviation and air cargo operations are the same as for the Proposed Action and are described in Section 1.3. The flight tracks are also the same as for the Proposed Action (Figure H-1), but the runway utilization is different. Average daily operations assigned to each flight track (by percent) and time period for this alternative are presented in Table H-9a-c for each of the modeled years.

Surface traffic data used in the modeling were developed from the traffic analysis presented in Section 4.2.3 and are presented in Table H-7.

The DNL contours for the proposed flight operations for modeled year 1998 are shown in Figure 4.4-5 in Section 4.4.4. The contours around Runway 14/32 result primarily from the limited number of Stage 2 aircraft air cargo operations. For modeled years 2003 and 2013, it is predicted that DNLs above 65 dB would not occur beyond the immediate runway area. Therefore, no noise contours are shown for these modeled years. This reflects the complete transition from Stage 2 to Stage 3 aircraft by the year 2000.

1.5 BUSINESS/TECHNOLOGY CENTER ALTERNATIVE

This alternative includes only nonaviation land uses. The focus of this alternative is commercial, industrial, and agricultural uses. The airfield would be used for agricultural uses. Other land uses for this alternative include residential and institutional uses. The total acreage used for each category is

Table H-7 Surface Traffic Data for the Proposed Action and Alternatives

Alternative	1998		2003		2013		Road Width
	AADT	Speed (mph)	AADT	Speed (mph)	AADT	Speed (mph)	Assumed (no. of lanes)
Proposed Action							
State Highway 1 - East of Airbase Road	9,400	55	9,505	55	9,601	55	4
State Highway 28 - West of Vandenberg Drive	4,003	55	4,056	55	4,104	55	2
State Highway 28 - East of Vandenberg Drive	9,596	55	10,125	55	10,602	55	4
State Highway 496 - East of Vandenberg Drive	3,130	35	3,527	35	3,885	35	2
State Highway 498 - East of Airbase Road	3,992	35	4,521	35	4,998	35	2
General Aviation Alternative							
State Highway 1 - East of Airbase Road	9,376	55	9,461	55	9,530	55	4
State Highway 28 - West of Vandenberg Drive	3,992	55	4,034	55	4,069	55	2
State Highway 28 - East of Vandenberg Drive	9,479	55	9,903	55	10,249	55	4
State Highway 496 - East of Vandenberg Drive	3,043	35	3,360	35	3,620	35	2
State Highway 498 - East of Airbase Road	3,875	35	4,299	35	4,645	35	2
Business/Technology Center Alternative							
State Highway 1 - East of Airbase Road	9,402	55	9,491	55	9,559	55	4
State Highway 28 - West of Vandenberg Drive	4,004	55	4,034	55	4,083	55	2
State Highway 28 - East of Vandenberg Drive	9,607	55	9,903	55	10,392	55	4
State Highway 496 - East of Vandenberg Drive	3,139	35	3,360	35	3,727	35	2
State Highway 498 - East of Airbase Road	4,003	35	4,299	35	4,788	35	2
Recreation/Tourism Alternative							
State Highway 1 - East of Airbase Road	9,372	55	9,468	55	9,534	55	4
State Highway 28 - West of Vandenberg Drive	3,990	55	4,038	55	4,071	55	2
State Highway 28 - East of Vandenberg Drive	9,459	55	9,939	55	10,269	55	4
State Highway 496 - East of Vandenberg Drive	3,028	35	3,387	35	3,635	35	2
State Highway 498 - East of Airbase Road	3,855	35	4,335	35	4,665	35	2
No-Action Alternative							
State Highway 1 - East of Airbase Road	200	55	200	55	200	55	4
State Highway 28 - West of Vandenberg Drive	200	55	200	55	200	55	2
State Highway 28 - East of Vandenberg Drive	200	55	200	55	200	55	4
State Highway 496 - East of Vandenberg Drive	200	35	200	35	200	35	2
State Highway 498 - East of Airbase Road	200	35	200	35	200	35	2

Table H-8a Summary of Annual Aircraft Operations for General Aviation Alternative for Modeled Year 1998

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Cargo			2,190	20
Boeing 727-200	548	25		
McDonnell Douglas MD-82	1,642	75		
General Aviation			8,500	80
Comsep (composite single-engine piston)	5,950	70		
Beech Baron 58P (twin-engine piston)	1,870	22		
Cessna Conquest II (twin-engine turboprop)	510	6		
Cessna Citation I (twin-engine turbojet)	170	2		

Table H-8b Summary of Annual Aircraft Operations for General Aviation Alternative for Modeled Year 2003

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Cargo			2,190	82
Boeing 727-200	0	0		
McDonnell Douglas MD-82	2,190	100		
General Aviation			10,000	18
Comsep (composite single-engine piston)	6,600	66		
Beech Baron 58P (twin-engine piston)	2,300	23		
Cessna Conquest II (twin-engine turboprop)	800	8		
Cessna Citation I (twin-engine turbojet)	300	3		

Table H-8c Summary of Annual Aircraft Operations for General Aviation Alternative for Modeled Year 2013

Type of Aircraft	Number of Operations	Percent of Category	Total for Category	Category Percent of Total
Air Cargo			2,190	6
Boeing 727-200	0	0		
McDonnell Douglas MD-82	2,190	100		
General Aviation			11,760	94
Comsep (composite single-engine piston)	7,560	63		
Beech Baron 58P (twin-engine piston)	2,880	24		
Cessna Conquest II (twin-engine turboprop)	960	8		
Cessna Citation I (twin-engine turbojet)	360	3		

Table H-9a. Assignment of Annual Average Daily Operations for the General Aviation Alternative Modeled Year: 1998

	Arrival Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**
Boeing B727-200	0.26	0.11	0.26	0.11	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	0.79	0.34	0.79	0.34	0.00	0.00	0.00	0.00
Comsep	1.55	0.08	1.55	0.08	1.55	0.08	1.55	0.08
Beech Baron 58P	0.49	0.03	0.49	0.03	0.49	0.03	0.49	0.03
Cessna Conquest II	0.13	0.01	0.13	0.01	0.13	0.01	0.13	0.01
Cessna Citation I	0.06	0.00	0.06	0.00	0.06	0.00	0.06	0.00
TOTAL:	**3.28**	**0.57**	**3.28**	**0.57**	**2.23**	**0.12**	**2.23**	**0.12**
	Departure Flight Tracks							
Boeing B727-200	0.26	0.11	0.26	0.11	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	0.79	0.34	0.79	0.34	0.00	0.00	0.00	0.00
Comsep	1.55	0.08	1.55	0.08	1.55	0.08	1.55	0.08
Beech Baron 58P	0.49	0.03	0.49	0.03	0.49	0.03	0.49	0.03
Cessna Conquest II	0.13	0.01	0.13	0.01	0.13	0.01	0.13	0.01
Cessna Citation I	0.06	0.00	0.06	0.00	0.06	0.00	0.06	0.00
TOTAL:	**3.28**	**0.57**	**3.28**	**0.57**	**2.23**	**0.12**	**2.23**	**0.12**
	Touch-and-Go Flight Tracks							
Comsep	0.82	0.00	0.82	0.00	0.82	0.00	0.82	0.00
Beech Baron 58P	0.26	0.00	0.26	0.00	0.26	0.00	0.26	0.00
Cessna Conquest II	0.07	0.00	0.07	0.00	0.07	0.00	0.07	0.00
TOTAL:	**1.15**	**0.00**	**1.15**	**0.00**	**1.15**	**0.00**	**1.15**	**0.00**

Table H-9b. Assignment of Annual Average Daily Operations for the General Aviation Alternative Modeled Year: 2013

	Arrival Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	Day	Night	Day	Night	Day	Night	Day	Night
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
Comsep	1.72	0.09	1.72	0.09	1.72	0.09	1.72	0.89
Beech Baron 58P	0.60	0.03	0.60	0.03	0.60	0.03	0.60	0.03
Cessna Conquest II	0.21	0.01	0.21	0.01	0.21	0.01	0.21	0.01
Cessna Citation I	0.10	0.01	0.10	0.01	0.10	0.01	0.10	0.01
TOTAL:	**3.68**	**0.59**	**3.68**	**0.59**	**2.63**	**0.14**	**2.63**	**0.14**
	Departure Flight Tracks							
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
Comsep	1.72	0.09	1.72	0.09	1.72	0.09	1.72	0.09
Beech Baron 58P	0.60	0.03	0.60	0.03	0.60	0.03	0.60	0.03
Cessna Conquest II	0.21	0.01	0.21	0.01	0.21	0.01	0.21	0.01
Cessna Citation I	0.10	0.01	0.10	0.01	0.10	0.01	0.10	0.01
TOTAL:	**3.68**	**0.59**	**3.68**	**0.59**	**2.63**	**0.14**	**2.63**	**0.14**
	Touch-and-Go Flight Tracks							
Comsep	0.90	0.00	0.90	0.00	0.90	0.00	0.90	0.00
Beech Baron 58P	0.32	0.00	0.32	0.00	0.32	0.00	0.32	0.00
Cessna Conquest II	0.11	0.00	0.11	0.00	0.11	0.00	0.11	0.00
TOTAL:	**1.33**	**0.00**	**1.33**	**0.00**	**1.33**	**0.00**	**1.33**	**0.00**

Table H-9c. Assignment of Annual Average Daily Operations for the General Aviation Alternative Modeled Year: 2013

	Arrival Flight Tracks							
	Runway 14		Runway 32		Runway 18		Runway 36	
Aircraft	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
Comsep	1.97	0.10	1.97	0.10	1.97	0.10	1.97	0.10
Beech Baron 58P	0.75	0.04	0.75	0.04	0.75	0.04	0.75	0.04
Cessna Conquest II	0.25	0.01	0.25	0.01	0.25	0.01	0.25	0.01
Cessna Citation I	0.12	0.01	0.12	0.01	0.12	0.01	0.12	0.01
TOTAL:	**4.14**	**0.61**	**4.14**	**0.61**	**3.09**	**0.16**	**3.09**	**0.16**
	Departure Flight Tracks							
Boeing B727-200	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
McDonnell Douglas MD-82	1.05	0.45	1.05	0.45	0.00	0.00	0.00	0.00
Comsep	1.97	0.10	1.97	0.10	1.97	0.10	1.97	0.10
Beech Baron 58P	0.75	0.04	0.75	0.04	0.75	0.04	0.75	0.04
Cessna Conquest II	0.25	0.01	0.25	0.01	0.25	0.01	0.25	0.01
Cessna Citation I	0.12	0.01	0.12	0.01	0.12	0.01	0.12	0.01
TOTAL:	**4.14**	**0.61**	**4.14**	**0.61**	**3.09**	**0.16**	**3.09**	**0.16**
	Touch-and-Go Flight Tracks							
Comsep	1.04	0.00	1.04	0.00	1.04	0.00	1.04	0.00
Beech Baron 58P	0.39	0.00	0.39	0.00	0.39	0.00	0.39	0.00
Cessna Conquest II	0.13	0.00	0.13	0.00	0.13	0.00	0.13	0.00
TOTAL:	**1.56**	**0.00**	**1.56**	**0.00**	**1.56**	**0.00**	**1.56**	**0.00**

summarized in Chapter 2.0, Table 2.3-6. Surface traffic data usec in the modeling were developed from the traffic analysis and are presented in Table H-7.

1.6 RECREATION/TOURISM ALTERNATIVE

This alternative also includes only nonaviation land uses. The focus of this alternative is recreational and commercial uses. The airfield would be used primarily for agricultural, commercial, and recreational uses. Other land uses for this alternative include residential, institutional, and industrial. The total acreage used for each category is summarized in Chapter 2.0, Table 2.3-10. Surface traffic data used in the modeling were developed from the traffic analysis and are presented in Table H-7.

1.7 NO-ACTION ALTERNATIVE

The No-Action Alternative would result in the Air Force retaining ownership of the property after closure. The property would not be put to further use. An Operating Location would be established to ensure base security and maintain the grounds and physical assets, including the existing utilities and structures. There would be no military activities/missions performed on the property identified for disposal. Surface traffic data used in the modeling were developed from the project traffic study and are presented in Table H-7.

2.0 NOISE METRICS

Noise, as used in this context, refers to sound pressure variations audible to the ear. The audibility of a sound depends on the amplitude and frequency of the sound and the individual's capability to hear the sound. Whether the sound is judged as noise depends largely on the listener's current activity and attitude toward the sound source, as well as the amplitude and frequency of the sound. The range in sound pressures which the human ear can comfortably detect encompasses a wide range of amplitudes, typically a factor larger than a million. To obtain convenient measurements and sensitivities at extremely low and high sound pressures, sound is measured in units of the decibel (dB). The dB is a dimensionless unit related to the logarithm of the ratio of the measured level to a reference level.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly. However, the following shortcut method can be used to combine sound levels:

Difference between two dB values	Add the following to the higher level
0 to 1	3
2 to 3	2
4 to 9	1
10 or more	0

The ear is not equally sensitive at all frequencies of sound. At low frequencies, characterized as a rumble or roar, the ear is not very sensitive, while at higher frequencies, characterized as a screech or a whine, the ear is most sensitive. The A-weighted level was developed to measure and report sound levels in a way which would more closely approach how people perceive the sound. All sound levels reported herein are in terms of A-weighted sound levels.

Environmental sound levels typically vary with time. This is especially true for areas near airports where noise levels will increase substantially as the aircraft passes overhead and afterwards diminish to typical community levels. Both the Department of Defense and the FAA have specified the following three noise metrics to describe aviation noise.

Day-Night Average Sound Level (DNL) is the 24-hour energy average A-weighted sound level with a 10 dB weighting added to those levels occurring between 10 p.m. and 7 a.m. The 10 dB weighting is a penalty representing the added intrusiveness of noise during normal sleeping hours. DNL is used to determine land use compatibility with noise from aircraft and surface traffic. The expression L_{dn} is often used in equations to designate day-night average sound level.

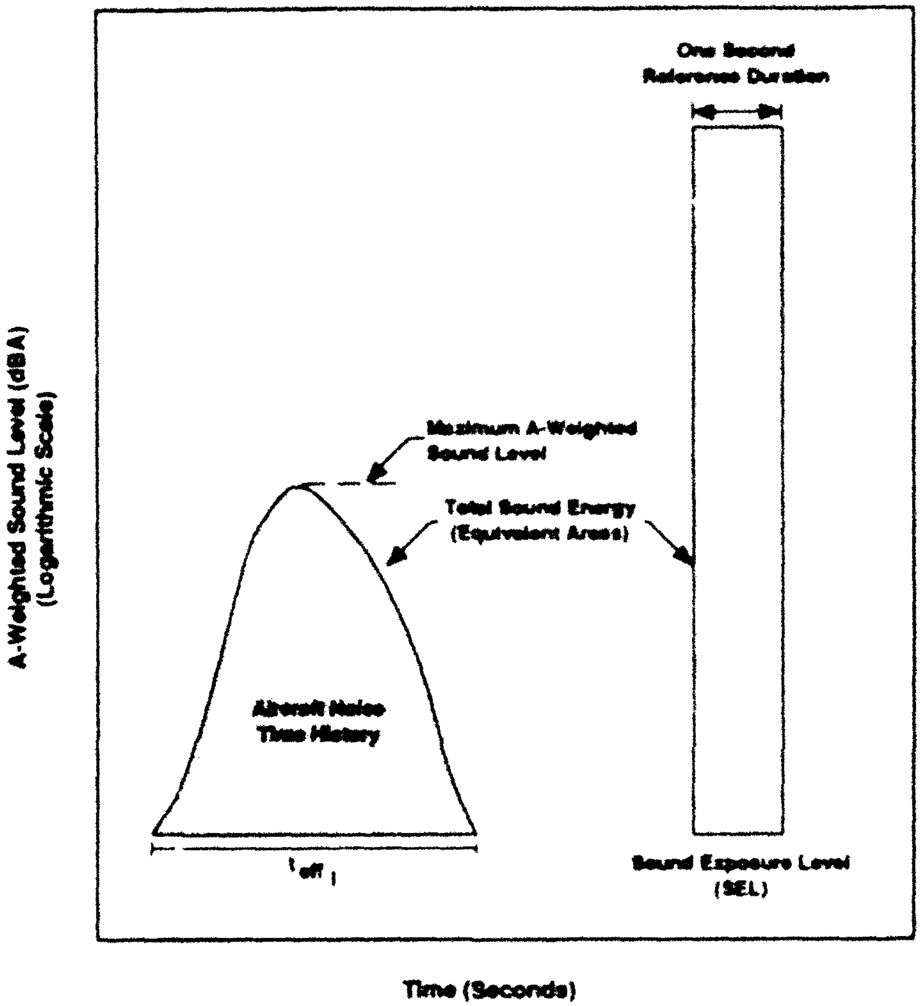
Maximum Sound Level is the highest instantaneous sound level observed during a single noise event no matter how long the sound may persist (Figure H-2).

Sound Exposure Level (SEL) *value represents* the A-weighted sound level integrated over the entire duration of the event and referenced to a duration of 1 second. Hence, it normalizes the event to a 1-second event. Typically, most events (aircraft flyover) last longer than 1 second, and the SEL value will be higher than the maximum sound level of the event. Figure H-2 illustrates the relationship between the maximum sound level and SEL.

3.0 NOISE MODELS

3.1 AIR TRAFFIC

The FAA-approved Noise Exposure Model (NOISEMAP), Version 6.0 (Moulton 1990), was used to predict aircraft noise levels. Since the early 1970s, the Department of Defense has been actively developing and refining the NOISEMAP program and its associated data base. The NOISEMAP computer program is a comprehensive set of computer routines for calculating noise contours from aircraft flight and ground runup operations, using aircraft-unique noise data for both fixed- and rotary-wing aircraft. The program requires specific input data, consisting of runway layout, aircraft types, number of operations, flight tracks, and noise performance data, to compute a grid of DNL values at uniform intervals. The grid is then processed by a contouring program which draws the contours at selected intervals.



Sound Exposure Level (SEL)

Figure H-2

3.2 SURFACE TRAFFIC

The FHWA Highway Traffic Noise Prediction Model was used to predict surface traffic noise. The model uses traffic volumes, vehicular mix, traffic speed, traffic distribution, and roadway length to estimate traffic noise levels.

4.0 ASSESSMENT CRITERIA

Criteria for assessing the effects of noise include annoyance, speech interference, sleep disturbance, noise-induced hearing loss, possible nonauditory health effects, reaction by animals, and land use compatibility. These criteria are often developed using statistical methods. The validity of generalizing statistics devised from large populations are suspect when applied to small sample sizes as in the affected areas near England AFB. Caution should be employed when interpreting the results of the impact analysis.

4.1 ANNOYANCE DUE TO SUBSONIC AIRCRAFT NOISE

Noise-induced annoyance is an attitude or mental process with both acoustic and nonacoustic determinants (Fidell *et al.* 1988). Noise-induced annoyance is perhaps most often defined as a generalized adverse attitude toward noise exposure. Noise annoyance is affected by many factors including sleep and speech interference and task interruption. The level of annoyance may also be affected by many nonacoustic factors.

In communities where the prevalence of annoyance is affected primarily by noise, reductions in noise can be expected to lead to reductions in prevalence of annoyance. In communities where the prevalence of annoyance is controlled by nonacoustic factors, such as odor, traffic congestion, etc., there may be little or no reduction in annoyance associated with reductions in exposure. The intensity of community response to noise exposure may even, in some cases, be essentially independent of physical exposure. In the case of community response to actions, such as airport siting or scheduling of supersonic transport aircraft, vigorous reaction has been encountered at the mere threat of exposure, or minor increases in exposure.

The standard method for determining the prevalence of annoyance in noise-exposed communities is by attitudinal survey. Surveys generally solicit self-reports of annoyance through one or more questions in the form "How bothered or annoyed have you been by the noise of (noise source) over the last (time period)?" Respondents are typically constrained in structured interviews to select one of a number of response alternatives, often-named categories such as "Not At All Annoyed," "Slightly Annoyed," "Moderately Annoyed," "Very Annoyed," or "Extremely Annoyed." Other means are sometimes used to infer the prevalence of annoyance from survey data (for example, by interpretation of responses to activity interference questions or by construction of elaborate composite indices), with varying degrees of face validity and success.

Predictions of the prevalence of annoyance in a community can be made by extrapolation from an empirical dosage-effect relationship. Based on the results of a number of sound surveys, Schultz (1978) developed a relationship between percent highly annoyed and DNL:

$$\%\ Highly\ Annoyed = 0.8553\ DNL - 0.0401\ DNL^2 + 0.00047\ DNL^3$$

Note that this relationship should not be evaluated outside the range of DNL = 45 to 90 dB. Figure H-3 presents this equation graphically. Less than 15 to 20 percent of the population would be predicted to be annoyed by DNL values less than 65 dBA, whereas over 37 percent of the population would be predicted to be annoyed from DNL values greater than 75 dBA. The relationship developed by Schultz was presented in the *Guidelines for Preparing Environmental Impact Statements on Noise* (National Academy of Sciences 1977).

These results were recently reviewed (Fidell *et al.*, 1989) and the original findings updated with results of more recent social surveys, bringing the number of data points used in defining the relationship to over 400. The findings of the new study differ only slightly from those of the original study.

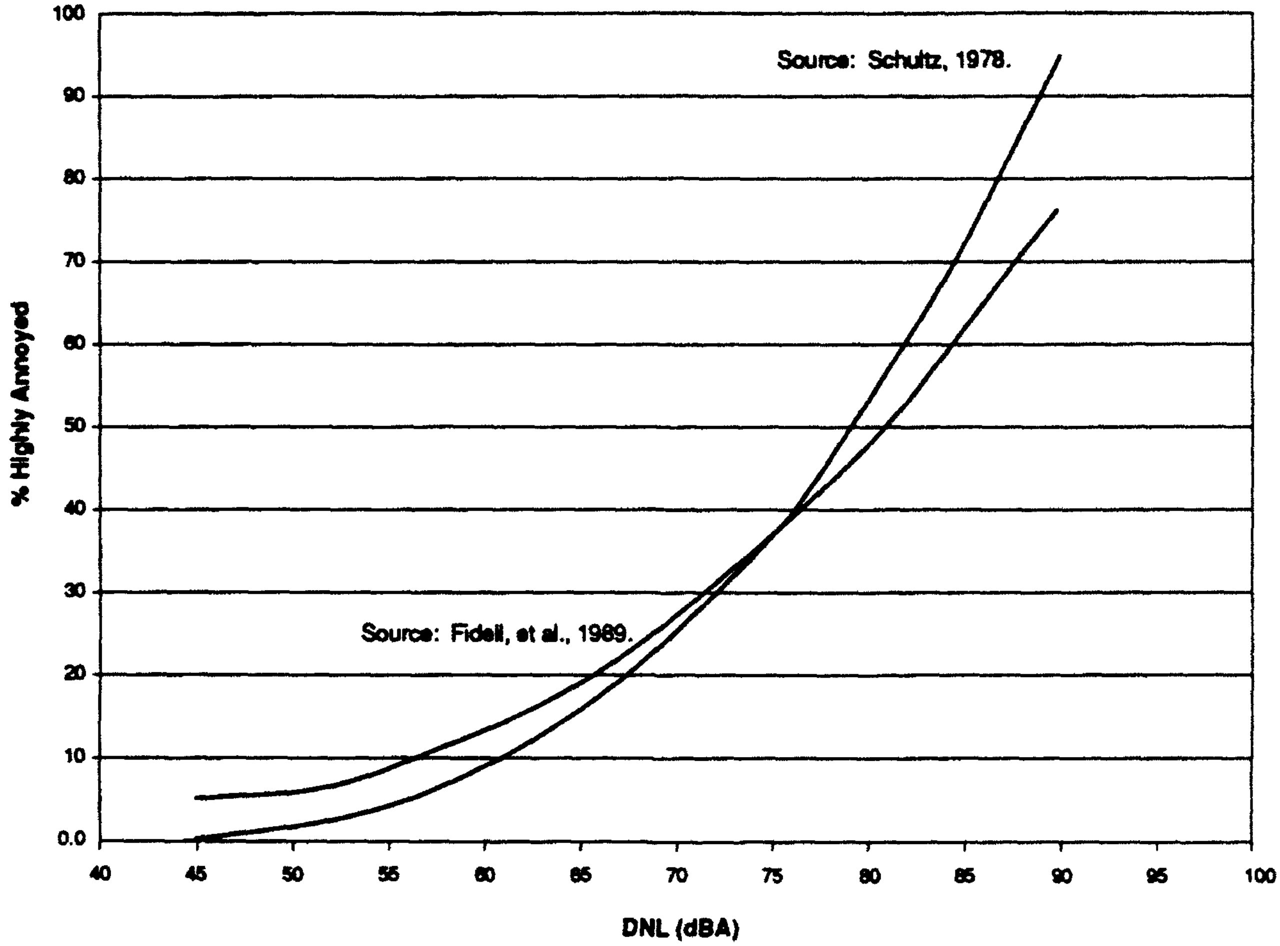
4.2 SPEECH INTERFERENCE AND RELATED EFFECTS DUE TO AIRCRAFT FLYOVER NOISE

One of the ways that noise affects daily life is by preventing or impairing speech communication. In a noisy environment, understanding of speech is diminished by masking of speech signals by intruding noises. Speakers generally raise their voices or move closer to listeners to compensate for masking noise in face-to-face communications, thereby increasing the level of speech at the listener's ear. As intruding noise levels rise higher and higher, speakers may cease talking altogether until conversation can be resumed at comfortable levels of vocal effort after noise intrusions end.

If the speech source is a radio or television, the listener may increase the volume during a noise intrusion. If noise intrusions occur repeatedly, the listener may choose to set the volume at a high level so that the program material can be heard even during noise intrusions.

In addition to losing information contained in the masked speech material, the listener may lose concentration because of the interruptions and thus become annoyed. If the speech message is some type of warning, the consequences could be serious.

Current practice in quantification of the magnitude of speech interference and predicting speech intelligibility ranges from metrics based on A-weighted sound pressure levels of the intruding noise alone to more complex metrics requiring detailed spectral information about both speech and noise intrusions. There are other effects of the reduced intelligibility of speech caused by noise intrusions. For example, if the understanding of speech is interrupted, performance may be reduced, annoyance may increase, and learning may be impaired.



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Community Noise Annoyance Curves

Figure H-3

As the noise level of an environment increases, people automatically raise their voices. The effect does not take place, however, if the noise event were to rise to a high level very suddenly.

4.2.1 Speech Interference Effects From Time-Varying Noise

Most research on speech interference due to noise has included the study of steady-state noise. As a result, reviews and summaries of noise effects on speech communications concentrate on continuous or at least long-duration noises (Miller 1974). However, noise intrusions are not always continuous or of long duration, but are frequently transient in nature. Transportation noise generates many such noise intrusions, consisting primarily of individual vehicle pass-bys, such as aircraft flyovers. Noise emitted by other vehicles (motorboats, snowmobiles, and off-highway vehicles) is also transient in nature.

It has been shown, at least for aircraft flyover noise, that accuracy of predictors of speech intelligibility are ranked in a similar fashion for both steady-state and time-varying or transient sounds (Williams *et al.* 1971; Kryter and Williams 1966). Of course, if one measures the noise of a flyover by the maximum A-level, then intelligibility associated with this level would be higher than for a steady noise of the same value, simply because the level is less than the maximum for much of the duration of the flyover.

4.2.2 Other Effects of Noise Which Relate to Speech Intelligibility

Aside from the direct effects of reduction in speech intelligibility, related effects may occur that tend to compound the loss of speech intelligibility itself.

Learning. One environment where speech intelligibility plays a critical role is in the classroom. In classrooms of schools exposed to aircraft flyover noise, speech becomes masked or the teacher stops talking altogether during an aircraft flyover (Crook and Langdon 1974). Pauses begin to occur when instantaneous flyover levels exceed 60 dB (A-weighted). Masking of the speech of teachers who do not pause starts at about the same level.

At levels of 75 dB, some masking occurs for 15 percent of the flyovers and increases to nearly 100 percent at 82 dB. Pauses occur for about 80 percent of the flyovers at this noise level. Because a marked increase in pauses and masking occurs when levels exceed 75 dB, this level is sometimes considered as one above which teaching is impaired due to disruption of speech communication. The effect that this may have on learning is unclear at this time. However, one study (Arnoult *et al.* 1986) could find no effect of noise on cognitive tasks from jet or helicopter noise over a range of 60 to 80 dB (A-level), even though intelligibility scores indicated a continuous decline starting at the 60 dB level. In a Japanese study (Ando *et al.* 1975), researchers failed to find differences in mental task performance among children from communities with different aircraft noise exposures.

Although there seems to be no proof that noise from aircraft flyovers affects learning, it is reported by Mills (1975) that children are not as able to understand speech in the presence of noise as are adults. It is hypothesized that part of the reason is due to the increased vocabulary which the adult can draw on as compared to the more limited vocabulary available to the young student. Also, when one is learning a language, it is more critical that all words be heard, rather than only enough to attain 95 percent sentence intelligibility, which may be sufficient for general conversations. It was mentioned above that when the maximum A-level for aircraft flyovers heard in a classroom exceeds 75 dB, masking of speech increases rapidly. However, it was also noted that pausing during flyovers and masking of speech for those teachers who continue to lecture during a flyover start at levels around 60 dB (Pearsons and Bennett 1974).

Annoyance. Klatt *et al.* (1969) studied the annoyance of speech interference by asking people to judge the annoyance of aircraft noise in the presence and absence of speech material. The speech material was composed of passages from newspaper and magazine articles. In addition to rating aircraft noise on an acceptability scale (unacceptable, barely acceptable, acceptable, and of no concern), the subjects were required to answer questions about the speech material. The voice level was considered to represent a raised voice level (assumed to be 68 dB). In general, for the raised voice talker, the rating of barely acceptable was given to flyover noise levels of 73 to 76 dB. However, if the speech level was reduced, the rating of the aircraft tended more toward unacceptable. The results suggested that if the speech level were such that 95 percent or better sentence intelligibility was maintained, then a barely acceptable rating or better acceptability rating could be expected. This result is in general agreement with the finding in schools that teachers pause or have their speech masked at levels above 75 dB (Crook and Langdon 1974).

Hall *et al.* (1985) tried to relate various types of activity interference in the home, related to speech and sleeping, to annoyance. The study found that there is a 50 percent chance that speech would be interfered with at a level of 58 dB. This result is in agreement with the other results, considering that the speech levels in the school environment of the Cook study are higher than the levels typically used in the home. Also, in a classroom situation, the teacher raises his or her voice as the flyover noise increases in intensity.

4.2.3 Predicting Speech Intelligibility and Related Effects Due to Aircraft Flyover Noise

It appears, from the above discussions, that when aircraft flyover noises exceed approximately 60 dB, speech communication may be interfered with either by masking or by pausing on the part of the speaker. Increasing the level of the flyover noise to 80 dB would reduce the intelligibility to zero even if a loud voice is used by those attempting to communicate.

The levels mentioned refer to noise levels measured indoors. The same noises measured outdoors would be 15 to 25 dB higher than these indoor levels during summer (windows open) and winter months (windows closed), respectively. These estimates are taken from Environmental Protection Agency (EPA) reviews of available data (1974).

Levels of aircraft noise measured inside dwellings and schools near the ends of runways at airports may exceed 60 dB inside (75 dB outside). During flyovers, speech intelligibility would be degraded. However, because the total duration is short, no more than a few seconds during each flyover, only a few syllables may be lost. People may be annoyed, but the annoyance may not be due to loss in speech communication, but rather due to startle or sleep disturbance as discussed below.

4.3 SLEEP DISTURBANCE DUE TO NOISE

The effects of noise on sleep have been a concern of parties interested in assuring suitable residential noise environments. Early studies noted background levels in bedrooms where sleep was apparently undisturbed by noise. Various levels between 25 to 50 dB (A-weighted) were observed to be associated with an absence of sleep disturbance. The bulk of research on noise effects, on which the current relationship is based, was conducted in the 1970s. The tests were conducted in a laboratory environment where awakening was measured either by a verbal response or by a button push, or by brain wave recordings (EEG) indicating stages of sleep (and awakening). Various types of noise were presented to the sleeping subjects throughout the night. These noises consisted primarily of transportation noises, including those produced by aircraft, trucks, cars, and trains. The aircraft noises included both flyover noises as well as sonic booms. Synthetic noises, including laboratory-generated sounds consisting of shaped noises and tones, were also studied.

Lukas (1975) and Goldstein and Lukas (1980) reviewed data available in the 1970s on sleep-stage changes and waking effects of different levels of noise. Since no known health effects were associated with either waking or sleep-stage changes, either measure was potentially useful as a metric of sleep disturbance. However, since waking, unlike sleep-stage changes, is simple to quantify, it is often selected as the metric for estimating the effects of noise on sleep. These two reviews showed great variability in the percentage of people awakened by exposure to noise. The variability is not merely random error, but reflects individual differences in adaptation or habituation, and also interpretation of the meaning of the sounds. Such factors cannot be estimated from the purely acoustic measures in noise exposure.

Another major review by Griefahn and Muzet (1978) provided similar information for effects of noise on waking. However, Griefahn and Muzet's results suggested less waking for a given level of noise than predicted by Lukas.

A recent review (Pearsons *et al.* 1989) of the literature related to sleep disturbance demonstrated that the relationship, based exclusively on laboratory studies, predicts greater sleep disturbance than that likely to occur in a real-life situation in which some adaptation has occurred. The prediction of relationships developed in this review should not be considered to yield precise estimates of sleep disturbance because of the great variability in the data sets from which they were developed. The relationships include only the duration and level components of "noise exposure." Increasing the precision of prediction would depend on quantification of some nonacoustic factors. Further, a recent review of field, as well as laboratory studies, suggests that habituation may reduce the effect of noise on sleep (Pearsons *et al.* 1989).

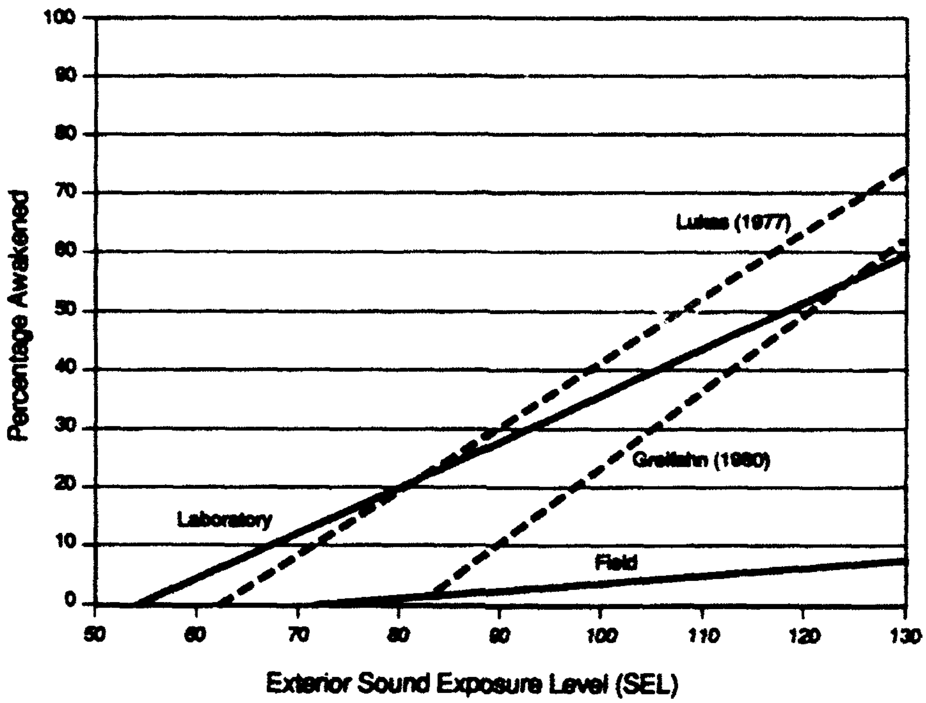
Noise must penetrate the home to disturb sleep. Interior noise levels are lower than exterior levels due to the attenuation of the sound energy by the structure. The amount of attenuation provided by the building is dependent on the type of construction and whether the windows are open or closed. The approximate national average attenuation factors are 15 dB for open windows and 25 dB for closed windows (Environmental Protection Agency 1974).

Incorporating these attenuation factors, the percent awakened relationships previously discussed under summer conditions are presented in Figure H-4. In conclusion, the scientific literature does not provide a consensus on sleep disturbance. There is no recognized criteria or standard which provides guidance to assess sleep disturbance due to noise.

4.4 NOISE-INDUCED HEARING LOSS

Hearing loss is measured in decibels and refers to the permanent auditory threshold shift of an individual's hearing in an ear. Auditory threshold refers to the minimum acoustic signal that evokes an auditory sensation (i.e., the quietest sound a person can hear). When a threshold shift occurs, a person's hearing is not as sensitive as before and the minimum sound that a person can hear must be louder. The threshold shift which naturally occurs with age is called presbycusis. Exposure to high levels of sound can cause temporary a' permanent threshold shifts usually referred to as noise-induced hearing loss. Permanent hearing loss is generally associated with destruction of the hair cells of the inner ear.

The EPA (1974) and the Committee on Hearing, Bioacoustics, and Biomechanics (National Academy of Sciences 1981) have addressed the risk of outdoor hearing loss. They have concluded that hearing loss would not be expected for people living outside the noise contour of DNL 75 dB. Several studies of populations near existing airports in the United States and the United Kingdom have shown that the possibility for permanent hearing loss in communities near intense commercial take-off and landing patterns is remote. An FAA-funded study compared the hearing of the population near the Los Angeles International Airport to that of the population in a quiet area away from aircraft noise (Parnel *et al.* 1972). A similar study was performed in the vicinity of London Heathrow Airport (Ward *et al.* 1972). Both studies concluded that there was no significant difference between the hearing loss of the two populations, and no correlation between the hearing level with the length of time people lived in the airport neighborhood.



Source: Pearsons (1985)

BR-ENG/025

Sleep Disruption (Awakening)

Figure H-4

4.5 NONAUDITORY HEALTH EFFECTS OF RESIDENTIAL AIRCRAFT NOISE

Based on summaries of previous research in the field (Thompson 1981; Thompson and Fidell 1989), predictions of nonauditory health effects of aircraft noise cannot be made. A valid predictive procedure requires: (1) evidence for causality between aircraft noise exposure and adverse nonauditory health consequences, and (2) knowledge of a quantitative relationship between amounts of noise exposure (dose) and specific health effects. Because results of studies of aircraft noise on health are equivocal, there is no sound scientific basis for making adequate risk assessments.

Alleged nonauditory health consequences of aircraft noise exposure that have been studied include birth defects, low birth weight, psychological illness, cancer, stroke, hypertension, sudden cardiac death, myocardial infarction, and cardiac arrhythmias. Of these, hypertension is the most biologically plausible effect of noise exposure. Noise appears to cause many of the same biochemical and physiological reactions, including temporary elevation of blood pressure, as do many other environmental stressors. These temporary increases in blood pressure are believed to lead to a gradual resetting of the body's blood pressure control system. Over a period of years, permanent hypertension may develop (Peterson *et al.* 1984).

Studies of residential aircraft noise have produced contradictory results. Early investigations indicated that hypertension was two to four times higher in areas near airports than in areas located away from airports (Karagodina *et al.* 1969). Although Meecham and Shaw (1988) continue to report excessive cardiovascular mortality among individuals 75 years or older living near the Los Angeles International Airport, their findings cannot be replicated (Frerichs *et al.* 1980). In fact, noise exposure increased over the years, while there was a decline in all cause, age-adjusted death rates and inconsistent changes in age-adjusted cardiovascular, hypertension, and cerebrovascular disease rates.

Studies which have controlled for multiple factors have shown no, or a very weak, association between noise exposure and nonauditory health effects. This observation holds for studies of occupational and traffic noise as well as for aircraft noise exposure. In contrast to the early reports of two- to six-fold increases in hypertension due to high industrial noise (Thompson and Fidell 1989), the more rigorously controlled studies of Talbott *et al.* (1985) and van Dijk et al. (1987) show no association between hypertension and prolonged exposure to high levels of occupational noise.

In the aggregate, studies indicate no association exists between street traffic noise and blood pressure or other cardiovascular changes. Two large prospective collaborative studies of heart disease are of particular interest. To date, cross-sectional data from these cohorts offer contradictory results. Data from one cohort show a slight increase in mean systolic blood pressure (2.4 mm Hg) in the noisiest compared to the quietest area; while data from the second cohort show the lowest mean systolic blood pressure and highest high-density lipoprotein cholesterol (lipoprotein protective of heart disease) for men in the noisiest area (Babisch and Gallacher 1990). These effects of traffic noise on blood pressure and blood lipids were more pronounced in men who were also exposed to high levels of noise at work.

It is clear from the foregoing that the current state of technical knowledge cannot support inference of a causal or consistent relationship, nor a quantitative dose-response, between residential aircraft noise exposure and health consequences. Thus, no technical means are available for predicting extra-auditory health effects of noise exposure. This conclusion cannot be construed as evidence of no effect from residential aircraft noise exposure to nonauditory health. Current findings, taken in sum, indicate only that further rigorous studies are needed.

4.6 DOMESTIC ANIMALS AND WILDLIFE

A recent study was published on the effects of aircraft noise on domestic animals which provided a review of the literature and a review of 209 claims pertinent to aircraft noise over a period spanning 32 years (Bowles *et al.* 1990). Studies since the late 1950s were motivated both by public concerns about what was then a relatively novel technology, supersonic flight, and by claims leveled against the U.S. Air Force for damage done to farm animals by very low-level subsonic overflights. Since that time, over 40 studies of aircraft noise and sonic booms, both in the United States and overseas, have addressed acute effects, including effects of startle responses (sheep, horses, cattle, fowl), and effects on reproduction and growth (sheep, cattle, fowl, swine), parental behaviors (fowl, mink), milk letdown (dairy cattle, dairy goats, swine), and egg production.

The amount of literature on the effects of noise on domestic animals is not large, and most of the studies have focused on the relation between dosages of continuous noise and effects. Chronic noises are not a good model for aircraft noise, which lasts only a few seconds, but is often very startling. The review of claims suggest that a major source of loss was panic induced in naive animals.

Aircraft noise may have effects because it might trigger a startle response, a sequence of physiological and behavioral events that once helped animals avoid predators. There are good dose-response relations describing the tendency to startle to various levels of noise, and the effect of habituation on the startle response.

The link between startles and serious effects (i.e., effects on productivity), is less certain. Here, an effect is defined as any change in a domestic animal that alters its economic value, including changes in body weight or weight gain, numbers of young produced, weight of young produced, fertility, milk production, general health, longevity, or tractability. At this point, changes in productivity are usually considered an adequate indirect measure of changes in well being, at least until objective legal guidelines are provided.

Recent focus on the effects on production runs counter to a trend in the literature toward measuring the relation between noise and physiological effects, such as changes in corticosteroid levels and in measures of immune system function. As a result, it is difficult to determine the relation between dosages of noise and serious effects using only physiological measures. The experimental literature is inadequate to document long-term or subtle effects resulting from exposure to aircraft noise.

4.7 LAND USE COMPATIBILITY GUIDELINES

Widespread concern over the impacts of aircraft noise began in the 1950s when high power jet aircraft were introduced to military service. The concern about noise impacts to the communities around and in the airbases led the Air Force to conduct major investigations into the noise properties of jets, methods of noise control for test operations, and the effects of noise from aircraft operations in communities surrounding airbases. These studies established an operational framework of investigation and identified the basic parameters affecting community response to noise. These studies also resulted in the first detailed procedures for estimating community response to aircraft noise (Stevens and Pietrasanta 1957).

Although most attention was given to establishing methods of estimating residential community response to noise (and establishing the conditions of noise "acceptability" for residential use), community development involves a variety of land uses with varying sensitivity to noise. Thus, land planning with respect to noise requires the establishment of noise criteria for different land uses. This need was met with the initial development of aircraft noise compatibility guidelines for varied land uses in the mid-1960s (Bishop 1964).

In residential areas, noise intrusions generate feelings of annoyance in individuals. High degrees of annoyance lead to the increasing potential for complaints and community actions (most typically, threats of legal actions, drafting of noise ordinances, etc.). Annoyance is based largely upon noise interference with speech communication, listening to radio and television, and sleep. Annoyance in the home may also be based upon dislike of "outside" intrusions of noise even though no specific task is interrupted.

Residential land use guidelines have been developed from consideration of two related factors:

(a) Accumulated case history experience of noise complaints and community actions near civil and military airports; and

(b) Relationships between environmental noise levels and degrees of annoyance (largely derived from social surveys in a number of communities).

In the establishment of land use guidelines for other land uses, the prime consideration is task interference. For many land uses, this translates into the degree of speech interference, taking into consideration the importance of speech communication and the presence of nonaircraft noise sources directly related to the specific land use considered. For some noise-sensitive land uses where any detectable noise signals which rise above the ambient noise level are unwanted (such as music halls), detectability may be the criterion rather than speech interference.

A final factor to be considered in all land uses involving indoor activities is the degree of noise insulation provided by the building structures. The land use guideline limits for unrestricted development within a specific land use assume noise insulation properties provided by typical commercial building construction. The detailed land use guidelines may also define a range of higher noise exposure where construction or development can be undertaken, provided a specified amount of noise insulation is included in the buildings. Special noise studies, undertaken by architectural or engineering specialists, may be needed to define the special noise insulation requirements for construction in these guideline ranges.

Estimates of total noise exposure resulting from aircraft operations, as expressed in DNL values, can be interpreted in terms of the probable effect on land uses. Suggested compatibility guidelines for evaluating land uses in aircraft noise exposure areas were originally developed by the FAA as presented in Section 3.4.4, Noise. Part 150 of the FAA regulations prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs. It prescribes the use of yearly DNL in the evaluation of airport noise environments. It also identifies those land use types which are normally compatible with various levels of noise exposure. Compatible or incompatible land use is determined by comparing the predicted or measured DNL level at a site with the values given in the table. The guidelines reflect the statistical variability of the responses of large groups of people to noise. Therefore, any particular level might not accurately assess an individual's perception of an actual noise environment.

While the FAA guidelines specifically apply to aircraft noise, it should be noted that DNL is also used to describe the noise environment due to other community noise sources, including motor vehicles and railroads. The use of DNL is endorsed by the scientific community to assess land use compatibility as it pertains to noise (American National Standards Institute 1990). Hence, the land use guidelines presented by the FAA can also be used to assess the noise impact from community noise sources other than aircraft.

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APPENDIX I

APPENDIX I

AIR EMISSIONS INVENTORY

Tables I-1, I-2, I-3, I-4, and I-5 contain information that was used to calculate the annual and worst-case hourly air pollutant emissions associated with the Proposed Action and alternatives for England Air Force Base reuse scenarios. Emissions are calculated for the years 1998, 2003, and 2013. These emission calculations were then used in the air quality model to predict the worst-case 1-hour ground-level ambient concentrations associated with aircraft operations.

Table I-1

England AFB Emissions Inventory for Nitrogen Oxides (tons/day)

Source	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative		
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013
Aircraft Flying Operations	0.19	0.19	0.21	0.01	0.01	0.01	--	--	--	--	--	--
Aircraft Ground Equipment	0.03	0.03	0.03	0.00	0.00	0.00	--	--	--	--	--	--
Fuel Combustion	0.03	0.03	0.04	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.01	0.01
Waste Burning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Use	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Storage and Transfer	--	--	--	--	--	--	--	--	--	--	--	--
Industrial Processes	--	--	--	--	--	--	0.07	0.13	0.20	--	--	--
Miscellaneous Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor Vehicles	0.15	0.29	0.41	0.13	0.23	0.32	0.15	0.27	0.37	0.12	0.25	0.33
TOTAL:	**0.40**	**0.54**	**0.69**	**0.16**	**0.26**	**0.35**	**0.23**	**0.41**	**0.58**	**0.12**	**0.26**	**0.34**

Table I-2

England AFB Emissions Inventory for Volatile Organic Compounds (tons/day)

Source	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative		
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013
Aircraft Flying Operations	0.13	0.14	0.15	0.04	0.05	0.05	--	--	--	--	--	--
Aircraft Ground Equipment	0.01	0.01	0.01	0.00	0.00	0.00	--	--	--	--	--	--
Fuel Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Burning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Use	0.00	0.02	0.02	0.00	0.09	0.09	--	0.00	0.01	--	--	--
Petroleum Storage and Transfer	0.03	0.03	0.04	0.02	0.02	0.02	0.00	0.00	0.00	--	--	--
Industrial Processes	--	--	--	--	--	--	0.07	0.13	0.20	--	--	--
Miscellaneous Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor Vehicles	0.36	0.66	0.95	0.29	0.54	0.76	0.35	0.64	0.85	0.27	0.57	0.77
TOTAL:	**0.53**	**0.86**	**1.17**	**0.35**	**0.70**	**0.92**	**0.42**	**0.77**	**1.06**	**0.27**	**0.57**	**0.77**

Table I-3

England AFB Emissions Inventory for PM_{10}
(tons/day)

Source	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative		
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013
Aircraft Flying Operations	0.01	0.01	0.01	0.00	0.00	0.00	--	--	--	--	--	--
Aircraft Ground Equipment	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--
Fuel Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waste Burning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Use	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Storage and Transfer	--	--	--	--	--	--	--	--	--	--	--	--
Industrial Processes	--	--	--	--	--	--	0.10	0.20	0.30	--	--	--
Miscellaneous Processes	0.25	0.25	0.27	0.21	0.22	0.24	0.18	0.20	0.23	0.31	0.36	0.42
Motor Vehicles	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02
TOTAL:	**0.27**	**0.27**	**0.30**	**0.22**	**0.23**	**0.26**	**0.29**	**0.41**	**0.55**	**0.32**	**0.37**	**0.44**

Table I-4

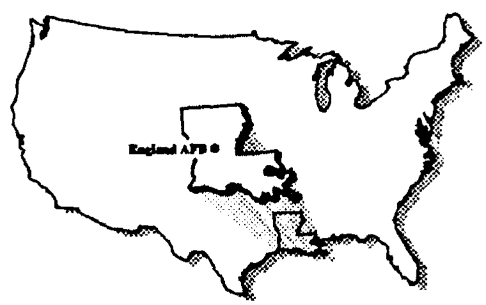
England AFB Emissions Inventory for Sulfur Oxides (tons/day)

Source	*Proposed Action*			*General Aviation Alternative*			*Business/Technology Center Alternative*			*Recreation/Tourism Alternative*		
	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013
Aircraft Flying Operations	0.03	0.03	0.03	0.00	0.00	0.00	--	--	--	--	--	--
Aircraft Ground Equipment	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--
Fuel Combustion	0.00	0.01	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Waste Burning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Use	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Storage and Transfer	--	--	--	--	--	--	--	--	--	--	--	--
Industrial Processes	--	--	--	--	--	--	0.10	0.20	0.30	--	--	--
Miscellaneous Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor Vehicles	0.02	0.04	0.06	0.02	0.03	0.05	0.02	0.04	0.05	0.02	0.03	0.05
TOTAL:	**0.05**	**0.08**	**0.11**	**0.02**	**0.03**	**0.06**	**0.12**	**0.24**	**0.35**	**0.02**	**0.03**	**0.05**

Table I-5

England AFB Emissions Inventory for Carbon Monoxide (tons/day)

	Proposed Action			General Aviation Alternative			Business/Technology Center Alternative			Recreation/Tourism Alternative		
Source	1998	2003	2013	1998	2003	2013	1998	2003	2013	1998	2003	2013
Aircraft Flying Operations	1.45	1.89	2.02	0.76	1.34	1.40	--	--	--	--	--	--
Aircraft Ground Equipment	0.22	0.28	0.30	0.11	0.20	0.21	--	--	--	--	--	--
Fuel Combustion	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Waste Burning	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Solvent Use	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum Storage and Transfer	--	--	--	--	--	--	--	--	--	--	--	--
Industrial Processes	--	--	--	--	--	--	0.37	0.73	1.10	--	--	--
Miscellaneous Processes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor Vehicles	1.56	2.83	4.14	1.24	2.37	3.29	1.49	2.77	3.68	1.19	2.47	3.35
TOTAL:	3.24	5.01	6.47	2.12	3.92	4.91	1.86	3.50	4.78	1.19	2.47	3.35



APPENDIX J

APPENDIX J

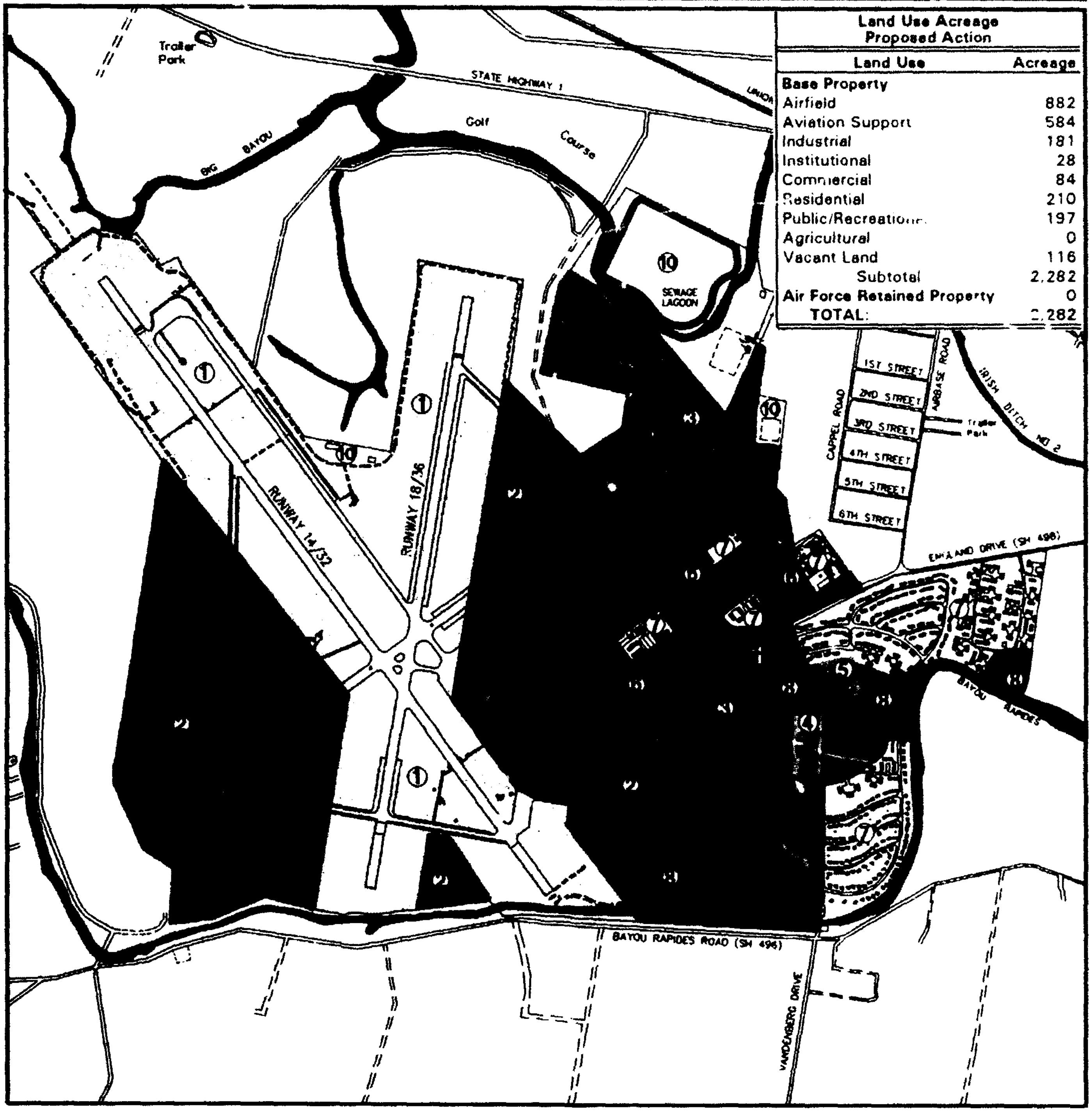
ENVIRONMENTAL IMPACTS OF ENGLAND AFB REUSE BY LAND USE CATEGORY

The purpose of this appendix is to quantify the environmental impacts of each land use category identified for the four alternatives, including the Proposed Action, evaluated in this Environmental Impact Statement (EIS) (Figures J-1 through J-4). The data in Tables J-1 through J-17 present the impacts of individual land use activities, such as industrial, commercial, or institutional, on their respective Regions of Influence as well as compare the impacts of the Proposed Action and alternatives for three benchmark years, 1998, 2003, and 2013, where applicable.

Tables J-1 through J-4 present data on the influencing factors (factors that drive environmental impacts); Tables J-5 through J-17 list the impacts on individual environmental resources evaluated in the EIS. These resources include transportation, utilities, hazardous materials and hazardous waste management, soils and geology, water resources, air quality, noise, biological resources, and cultural and paleontological resources. Included in this appendix is at least one table for each resource area, except water resources. Data on water demand is presented as part of the utilities analysis; the effects on surface and groundwater resources in and around the base have not been quantified in the EIS and have not been disaggregated in this appendix.

No quantification is provided in Table J-11 because the quantities of hazardous materials used and hazardous wastes generated will depend on the type and intensity of industrial and commercial activities developed on the site. Table J-11 presents a generalized description of the hazardous materials used under individual land use categories. Table J-12 summarizes the number of Installation Restoration Program (IRP) sites identified on the base as of 1992, but does not give the likely status of these sites in 1998, 2003, and 2013. It is expected that most of the sites will be remediated by the first benchmark year, 1998.

A number of factors and assumptions were used in disaggregating the total impacts of an alternative to individual land use categories. These are presented as footnotes on the relevant tables.



Land Use Acreage Proposed Action

Land Use	Acreage
Base Property	
Airfield	882
Aviation Support	584
Industrial	181
Institutional	28
Commercial	84
Residential	210
Public/Recreation	197
Agricultural	0
Vacant Land	116
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

EXPLANATION

- ① Airfield
- ② Aviation Support
- ③ Industrial
- ④ Institutional (Medical)
- ⑤ Institutional (Education)
- ⑥ Commercial
- ⑦ Residential
- ⑧ Public/Recreation
- ⑨ Agriculture*
- ⑩ Vacant Land**
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension

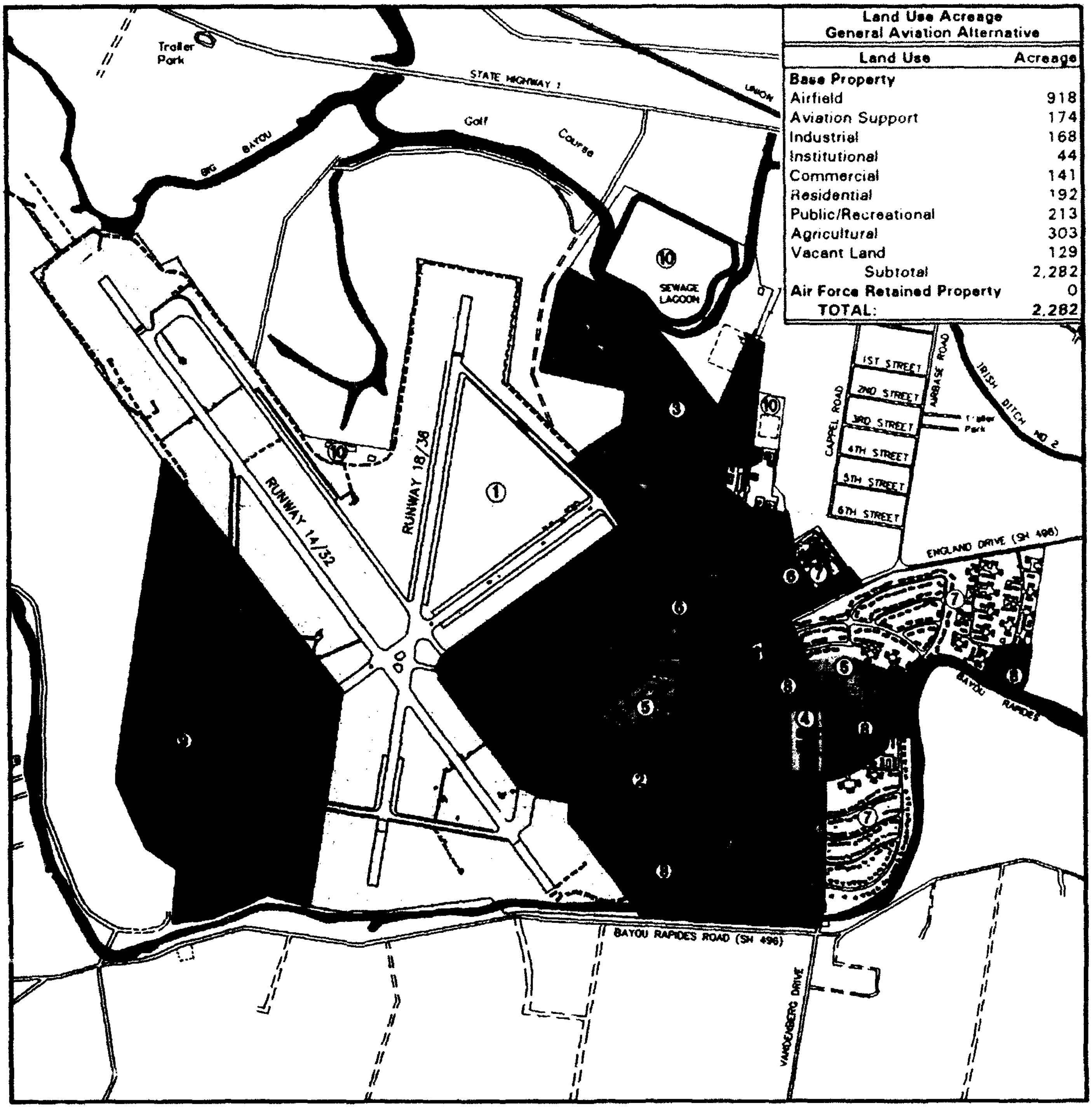
*Not Applicable

**Within Base Boundary

0 500 1000 2000 Feet

Industrial Airpark/ Regional Airport (Proposed Action)

Figure J-1



Land Use Acreage
General Aviation Alternative

Land Use	Acreage
Base Property	
Airfield	918
Aviation Support	174
Industrial	168
Institutional	44
Commercial	141
Residential	192
Public/Recreational	213
Agricultural	303
Vacant Land	129
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

EXPLANATION

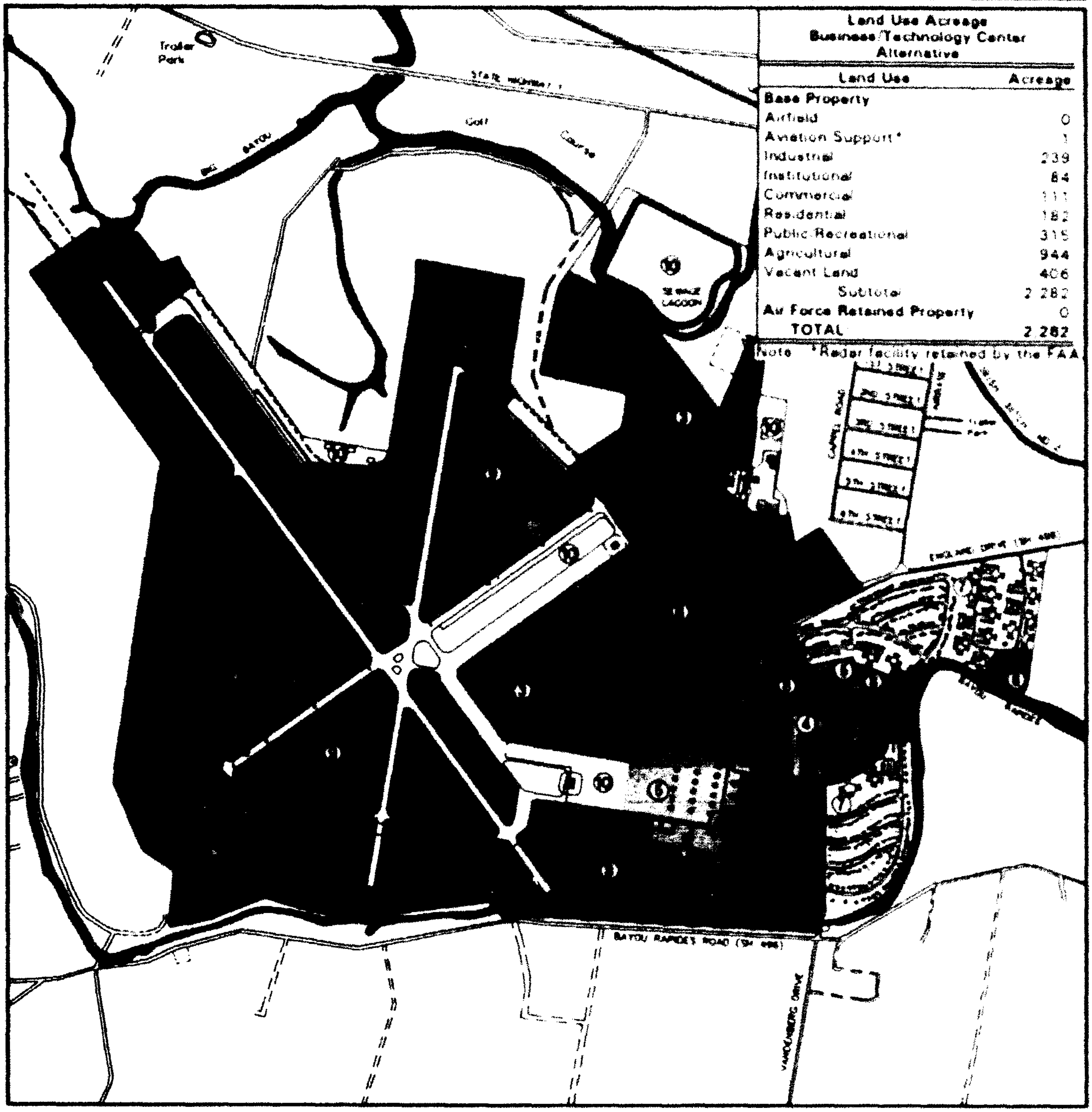
- 1 Airfield
- 2 Aviation Support
- 3 Industrial
- 4 Institutional (Medical)
- 5 Institutional (Education)
- 6 Commercial
- 7 Residential
- 8 Public/Recreation
- 9 Agriculture
- 10 Vacant Land*
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension

* Within Base Boundary

0 500 1000 2000 Feet

General Aviation Alternative

Figure J-2



Land Use Acreage
Business/Technology Center Alternative

Land Use	Acreage
Base Property	
Airfield	0
Aviation Support*	1
Industrial	239
Institutional	84
Commercial	111
Residential	182
Public/Recreational	315
Agricultural	944
Vacant Land	406
Subtotal	2,282
Air Force Retained Property	0
TOTAL	**2,282**

Note: *Radar facility retained by the FAA

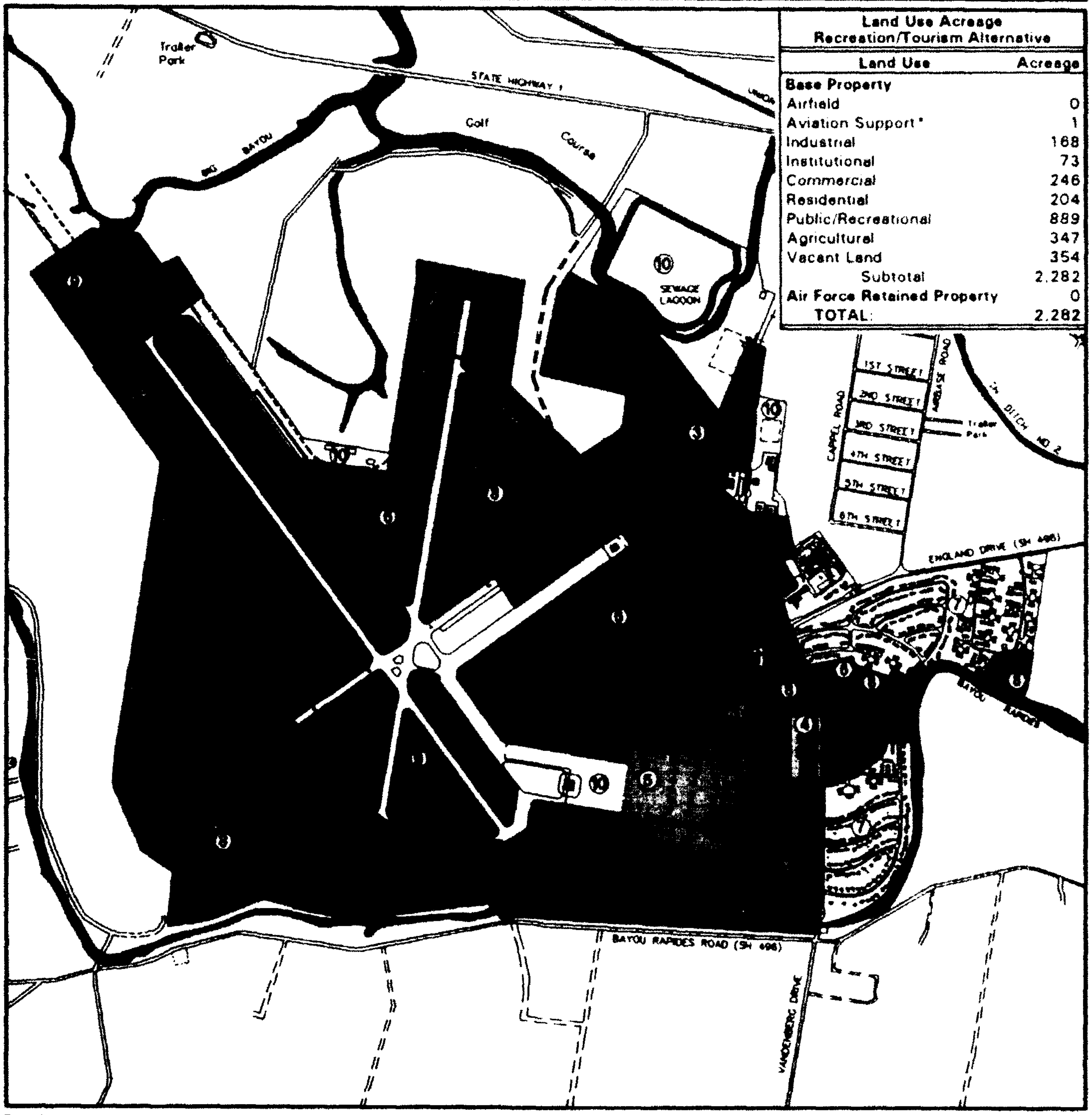
EXPLANATION

- ① Airfield *
- ② Aviation Support
- ③ Industrial
- ④ Institutional (Medical)
- ⑤ Institutional (Education)
- ⑥ Commercial
- ⑦ Residential
- ⑧ Public/Recreation
- ⑨ Agriculture
- ⑩ Vacant Land **
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension
- * Not Applicable
- ** Within Base Boundary

0 500 1000 2000 Feet

Business/Technology Center Alternative

Figure J-3



Land Use Acreage Recreation/Tourism Alternative	
Land Use	**Acreage**
Base Property	
Airfield	0
Aviation Support*	1
Industrial	168
Institutional	73
Commercial	246
Residential	204
Public/Recreational	889
Agricultural	347
Vacant Land	354
Subtotal	2,282
Air Force Retained Property	0
TOTAL:	2,282

EXPLANATION

- ① Airfield*
- ② Aviation Support
- ③ Industrial
- ④ Institutional (Medical)
- ⑤ Institutional (Education)
- ⑥ Commercial
- ⑦ Residential
- ⑧ Public/Recreation
- ⑨ Agriculture
- ⑩ Vacant Land**
- Private Land (Cemetery)
- Proposed Frank Andrews Blvd Extension

* Not Applicable

** Within Base Boundary

0 500 1000 2000 Feet

Recreation/Tourism Alternative

Figure J-4

Table J-1

Direct Employment by Land Use Category, England AFB Reuse

	1998				2003				2013			
Land Use Category	**P.A.[1]**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	110	10	0	0	210	124	0	0	300	238	0	0
Industrial	129	99	248	103	245	198	496	207	351	198	642	207
Institutional (Medical/Educational)	87	244	279	152	165	349	406	304	236	360	406	338
Commercial	388	211	183	225	755	422	365	450	1,084	730	643	692
Residential	6	6	6	11	6	6	6	11	6	6	6	11
Public/Recreational	9	7	21	61	9	7	21	179	9	7	21	316
Agricultural	0	6	6	6	0	6	6	6	0	6	6	6
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	**729**	**583**	**743**	**558**	**1,390**	**1,112**	**1,300**	**1,157**	**1,986**	**1,545**	**1,724**	**1,570**

Notes: [1]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-2

Total Employment[1] by Land Use Category, England AFB Reuse

Land Use Category	1998				2003				2013			
	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	200	17	0	0	358	203	0	0	500	384	0	0
Industrial	234	169	380	157	418	324	763	316	585	319	986	316
Institutional (Medical/Educational)	158	415	428	232	282	571	624	465	393	581	624	516
Commercial	703	360	280	344	1,288	690	560	687	1,807	1,177	988	1,055
Residential	10	10	10	17	10	10	10	17	10	10	10	17
Public/Recreational	16	12	32	93	16	11	32	274	15	11	32	482
Agricultural	0	10	10	10	0	10	10	10	0	10	10	10
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	1,321	993	1,140	853	2,372	1,819	1,999	1,769	3,310	2,492	2,650	2,396

Notes: [1]Total employment includes direct and secondary employment.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-3

Population Inmigration[1] by Land Use Category, England AFB Reuse

Land Use Category	1998				2003				2013			
	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	28	2	0	0	76	30	0	0	215	61	0	0
Industrial	33	25	57	31	89	48	107	55	251	50	218	56
Institutional (Medical/Educational)	22	60	64	46	60	85	87	81	169	92	137	92
Commercial	99	53	42	68	274	102	79	119	776	186	218	189
Residential	0	0	0	0	0	0	0	0	0	0	0	0
Public/Recreational	0	0	0	0	0	0	0	48	0	0	0	86
Agricultural	0	0	0	0	0	0	0	0	0	0	0	0
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	182	140	163	145	499	265	273	303	1,411	389	573	423

Notes: [1]No population inmigration is assumed for Residential and Agricultural land use categories. Some population inmigration is assumed to occur for the Public/Recreational land use under the Recreation/Tourism Alternative.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-4

Land Use Impacts[1] by Land Use Category, England AFB Reuse (acres)

	1998				2003				2013			
Land Use Category	**P.A.[2]**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**
Airfield	882	918	0	0	882	918	0	0	882	918	0	0
Aviation Support	200	174	0	0	584	174	0	0	584	174	1	1
Industrial	60	56	80	56	120	112	160	112	181	168	239	168
Institutional (Medical/Educational)	28	28	28	28	28	35	60	60	28	44	84	73
Commercial	28	47	37	82	56	94	74	164	84	141	111	246
Residential	70	64	91	68	140	128	137	136	210	192	182	204
Public/Recreational	44	47	70	71	88	94	140	444	197	213	315	889
Agricultural	0	101	315	116	0	202	630	232	0	303	944	347
Vacant Land	970	847	1,661	1,861	384	525	1,081	1,134	116	129	406	354
Total:	2,282	2,282	2,282	2,282	2,282	2,282	2,282	2,282	2,282	2,282	2,282	2,282

Notes: [1]Except for Airfield and Aviation Support land use categories, land use absorption rates are generally assumed to be one-third of the 2013 acreage in 1998 and two-thirds of the 2013 acreage in 2003. Different absorption rates have been assumed in Residential land use for the Business/Technology Center Alternative (one-half of 2013 acreage in 1998 and three-quarters of 2013 acreage in 2003) and in Public/Recreational land use for the Recreation/Tourism Alternative (one-fifth of 2013 acreage in 1998 and one-half of 2013 acreage in 2003).

[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-5

Transportation Impacts by Land Use Category, England AFB Reuse (Average Daily Trips)

	1998				2003				2013			
Land Use Category	**P.A.**[1]	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**	**P.A.**	**Alt. 1**	**Alt. 2**	**Alt. 3**
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support[2]	520	120	0	0	920	428	0	0	1,200	676	0	0
Industrial[3]	413	317	794	330	784	634	1,587	662	1,123	634	1,926	621
Institutional (Medical/Educational)[4]	261	732	837	456	495	1,047	1,218	912	708	1,080	1,218	1,014
Commercial[4]	1,171	627	554	671	2,258	1,267	1,093	1,325	3,259	2,182	1,936	2,053
Residential[5]	420	384	546	408	840	768	819	816	1,260	1,152	1,092	1,224
Public/Recreational[6]	131	142	210	356	263	284	420	889	394	426	630	1,334
Agricultural[7]	0	10	31	12	0	20	63	23	0	30	94	35
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	**2,916**	**2,332**	**2,972**	**2,233**	**5,560**	**4,448**	**5,200**	**4,627**	**7,944**	**6,180**	**6,896**	**6,281**

Notes: [1]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.
[2]Aviation Support land use category includes 2 trips per employee plus 300 passenger trips in 1998, 500 passenger trips in 2003, and 600 passenger trips in 2013 for the Proposed Action and 2 trips per employee plus 100 passenger trips in 1998, 180 passenger trips in 2003, and 200 passenger trips in 2013 for Alternative 1.
[3]For Industrial land use, each employee is assumed to generate 3.2 trips per day except in 2013 under Alternatives 2 and 3 where the trip generation rate is 3.0 per employee. The industrial mix under these alternatives is expected to be more diversified than under the Proposed Action or Alternative 1.
[4]For Institutional and Commercial land uses, each employee is assumed to generate 3.0 trips per day.
[5]For Residential land use, average daily trips are based on 6 trips per day for each acre of residential land use.
[6]For Public/Recreational land use, trip generation rate is 2 trips per day per acre.
[7]For Agricultural land use, trip generation rate is 1 trip per 10 acres of agricultural land.

Table J-6

Water Demand[1] by Land Use Category, England AFB Reuse
(gallons per day)

	1998				2003				2013			
Land Use Category	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	18,730	1,580	0	0	40,830	20,762	0	0	82,275	40,619	0	0
Industrial	22,002	16,812	40,849	18,614	47,710	33,174	80,123	35,766	96,138	33,624	121,596	35,991
Institutional (Medical/ Educational)	14,781	41,072	45,927	27,526	32,145	58,562	65,453	52,577	64,693	61,380	76,703	58,894
Commercial	66,119	35,768	30,129	40,725	146,965	70,636	59,020	77,625	297,092	124,340	121,709	120,721
Residential	678	678	678	1,243	678	678	678	1,243	678	678	678	1,243
Public/Recreational	1,017	791	2,373	6,893	1,017	791	2,373	31,027	1,017	791	2,373	55,058
Agricultural	0	678	678	678	0	678	678	678	0	678	678	678
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	**123,327**	**97,379**	**120,634**	**95,679**	**269,345**	**185,281**	**208,325**	**198,916**	**541,893**	**262,110**	**323,737**	**272,585**

Notes: [1]Region of influence (Rapides Parish) water demand is based on per employee requirements onbase plus per capita requirements of inmigrant population. Ninety percent of the inmigrant population is assumed to be residing in Rapides Parish.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-7

Wastewater Generation[1] by Land Use Category, England AFB Reuse (gallons per day)

Land Use Category	1998				2003				2013			
	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	12,990	1,095	0	0	28,350	14,397	0	0	57,263	28,172	0	0
Industrial	15,260	11,660	28,322	12,917	33,128	23,004	55,541	24,809	66,911	23,319	84,411	24,966
Institutional (Medical/Educational)	10,251	28,482	31,842	19,101	22,320	40,610	45,371	36,470	45,026	42,570	53,246	40,854
Commercial	45,857	24,806	20,889	28,260	102,045	48,981	40,913	53,843	206,772	86,235	84,489	83,744
Residential	468	468	468	858	468	468	468	858	468	468	468	858
Public/Recreational	702	546	1,638	4,758	702	546	1,638	21,522	702	546	1,638	38,193
Agricultural	0	468	468	468	0	468	468	468	0	468	468	468
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	85,528	67,525	83,627	66,362	187,013	128,474	144,399	137,970	377,142	181,778	224,720	189,083

Notes: [1]Region of Influence (Rapides Parish) wastewater generation is based on per employee generation onbase plus per capita generation by inmigrant population. Ninety percent of the inmigrant population is assumed to be residing in Rapides Parish.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-8

Solid Waste Generation[1] by Land Use Category, England AFB Reuse (pounds per day)

Land Use Category	1998				2003				2013			
	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	676	59	0	0	1,392	755	0	0	2,468	1,465	0	0
Industrial	794	608	1,497	655	1,626	1,206	2,962	1,283	2,885	1,215	4,191	1,287
Institutional (Medical/Educational)	534	1,490	1,683	967	1,095	2,128	2,422	1,885	1,941	2,214	2,647	2,104
Commercial	2,386	1,294	1,104	1,431	5,008	2,569	2,181	2,786	8,912	4,487	4,196	4,311
Residential	30	30	30	55	30	30	30	55	30	30	30	55
Public/Recreational	45	35	105	305	45	35	105	1,111	45	35	105	1,967
Agricultural	0	30	30	30	0	30	30	30	0	30	30	30
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	4,465	3,546	4,449	3,443	9,196	6,753	7,730	7,150	16,281	9,476	11,199	9,754

Notes: [1]Region of Influence (Rapides Parish) solid waste production is based on per employee production onbase plus per capita production by immigrant population. Ninety percent of the immigrant population is assumed to be residing in Rapides Parish.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-9

Electricity Demand[1] by Land Use Category, England AFB Reuse (kWh per day)

Land Use Category	1998 P.A.[2]	1998 Alt. 1	1998 Alt. 2	1998 Alt. 3	2003 P.A.	2003 Alt. 1	2003 Alt. 2	2003 Alt. 3	2013 P.A.	2013 Alt. 1	2013 Alt. 2	2013 Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	13,006	986	0	0	32,946	14,098	0	0	85,380	28,291	0	0
Industrial	15,311	11,633	27,117	13,900	38,557	22,547	51,714	25,306	99,697	23,267	95,557	25,666
Institutional (Medical/Educational)	10,234	28,090	30,461	20,603	25,989	39,883	42,120	37,246	67,118	42,696	60,120	42,111
Commercial	45,961	24,693	19,988	30,465	118,723	47,945	38,149	54,810	308,194	86,378	95,584	86,447
Residential	160	160	160	293	160	160	160	293	160	160	160	293
Public/Recreational	239	186	559	1,623	239	186	559	22,041	239	186	559	39,366
Agricultural	0	160	160	160	0	160	160	160	0	160	160	160
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	84,911	65,908	78,445	67,043	216,614	124,979	132,862	139,856	560,788	181,138	252,140	194,043

Notes: [1]Region of Influence (Rapides Parish) electricity demand is based on per employee demand onbase plus per capita demand by inmigrant population. Ninety percent of the inmigrant population is assumed to be residing in Rapides Parish.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-10

Natural Gas Demand[1] by Land Use Category, England AFB Reuse
(cubic feet per day)

	1998				2003				2013			
Land Use Category	P.A.[2]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0	0	0	0	0	0	0	0	0
Aviation Support	9,812	838	0	0	20,964	10,906	0	0	40,485	21,271	0	0
Industrial	11,523	8,811	21,515	9,661	24,491	17,424	42,337	18,693	47,313	17,622	62,670	18,792
Institutional (Medical/Educational)	7,746	21,556	24,192	14,282	16,500	30,751	34,597	27,475	31,835	32,148	39,547	30,740
Commercial	34,633	18,751	15,870	21,132	75,446	37,106	31,181	40,581	146,200	65,134	62,734	62,999
Residential	384	384	384	704	384	384	384	704	384	384	384	704
Public/Recreational	576	448	1,344	3,904	576	448	1,344	16,208	576	448	1,344	28,738
Agricultural	0	384	384	384	0	384	384	384	0	384	384	384
Vacant Land	0	0	0	0	0	0	0	0	0	0	0	0
Total:	64,674	51,172	63,689	50,067	:38,361	97,403	110,227	104,045	266,793	137,391	167,063	142,357

Notes: [1]Region of Influence (Rapides Parish) natural gas demand is based on per employee demand onbase plus per capita demand by inmigrant population. Ninety percent of the inmigrant population is assumed to be residing in Rapides Parish.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-11

Hazardous Materials Usage[1] by Land Use Category, England AFB Reuse, 1998-2013

Land Use Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative
Airfield	Aviation fuels, propylene glycol, ethylene glycol, heating oils	Same as Proposed Action	N/A[2]	N/A
Aviation Support	Fuels; solvents; paints; petroleum, oil, and lubricants (POL); hydraulic fluids; degreasers; corrosives; heavy metals; reactives; thinners; paints; glycols; ignitables; heating oils; plating waste; cyanides; laboratory waste	Same as Proposed Action	N/A	N/A
Industrial	Solvent, heavy metals, POL, corrosives, catalysts, aerosols, fuels, heating oils, ignitables, pesticides	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Institutional (Medical/Educational)	Pharmaceuticals, medical/biohazardous waste, chemotherapeutic drugs, radiological sources, heavy metals	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Commercial	Fuels, solvents, corrosives, POL, ignitables, heating oils, pesticides, dry cleaning wastes	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Residential	Pesticides, fertilizers, fuels, waste oils, chlorine, and household wastes	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Public/Recreational	Pesticides, fertilizers, chlorine, heating oils, paints, thinners, cleaners, solvents, aerosols, and POL	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Agricultural	Pesticides, fertilizers	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action
Vacant Land	Pesticides	Same as Proposed Action	Same as Proposed Action	Same as Proposed Action

Notes: [1]Quantities of hazardous materials used will depend on the specific industrial development and are not reported here.
[2]N/A = Not Applicable.

Table J-12

Number of Installation Restoration Program Sites[1] by Land Use Category, England AFB Reuse

Land Use Category	1998			
	P.A.[2]	Alt. 1	Alt. 2	Alt. 3
Airfield	1	1	0	0
Aviation Support	12	1	0	0
Industrial	13	8	10	8
Institutional (Medical/Educational)	1	2	2	2
Commercial	3	6	3	6
Residential	0	0	0	1
Public/Recreational	3	4	6	10
Agricultural	0	7	8	2
Vacant Land	9	13	13	13
Total:	**42**	**42**	**42**	**42**

Notes: [1]Summarized above are identified Installation Restoration Program sites as of 1992. The number of sites over the 1992-2013 period would change as remediation measures are implemented for individual sites.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-13

Soils and Geology[1] Impacts by Land Use Category, England AFB Reuse, 1998-2013
(acres of soil disturbance)

Land Use Category	P.A.[2]	Alt. 1	Alt. 2	Alt. 3
Airfield	0	0	0	0
Aviation Support	75	0	0	0
Industrial	15	15	15	0
Institutional (Medical/Educational)	0	0	0	0
Commercial	0	0	0	0
Residential	0	0	0	0
Public/Recreational	68	68	100	725
Agricultural	0	303	900	350
Vacant Land	0	0	0	0
Total:	**158**	**386**	**1,015**	**1,075**

Notes: [1]Disturbance of soils would depend upon the construction schedules of various facilities onbase. Therefore, no breakdown is provided for the benchmark years 1998, 2003, and 2013.
[2]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.

Table J-14

Air Quality Impacts by Land Use Category, England AFB Reuse
(total emissions in tons/day)

Land Use Category	1998				2003				2013			
	P.A.[1]	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3	P.A.	Alt. 1	Alt. 2	Alt. 3
Airfield[2]	1.81	0.81	0.00	0.00	2.26	1.40	0.00	0.00	2.43	1.46	0.00	0.00
Aviation Support	0.48	0.11	0.00	0.00	0.72	0.37	0.00	0.00	0.94	0.55	0.00	0.00
Industrial	0.38	0.29	0.79	0.29	0.63	0.52	1.65	0.48	0.88	0.51	2.05	0.50
Institutional (Medical/Educational)	0.24	0.64	0.82	0.38	0.41	0.90	1.23	0.74	0.57	0.86	1.32	0.79
Commercial	1.07	0.56	0.55	0.57	1.84	1.04	1.12	1.07	2.59	1.76	2.05	1.63
Residential	0.40	0.33	0.53	0.35	0.68	0.64	0.85	0.66	1.01	0.96	1.17	0.94
Public/Recreational	0.11	0.12	0.20	0.31	0.22	0.23	0.43	0.71	0.32	0.35	0.66	1.04
Agricultural	0.00	0.02	0.03	0.02	0.00	0.04	0.05	0.04	0.00	0.05	0.07	0.05
Vacant Land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total:	**4.49**	**2.88**	**2.92**	**1.92**	**6.76**	**5.14**	**5.33**	**3.70**	**8.74**	**6.50**	**7.32**	**4.95**

Notes: [1]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.
[2]For Airfield land use category, emissions are based on the aircraft flying operations; for all other categories, emissions are based on average daily traffic generated by each land use category.

Table J-15

Expected Noise Levels by Land Use Category, England AFB Reuse, 1998-2013
(typical DNL in dB)

Land Use Category	P.A.[1]	Alt. 1	Alt. 2	Alt. 3
Airfield	70-75	70-75	N/A[2]	N/A
Aviation Support	65-70	65-70	N/A	N/A
Industrial	65-70	65-70	65-70	65-70
Institutional (Medical/Educational)	55-60	55-60	55-60	55-60
Commercial	60-65	60-65	60-65	60-65
Residential	50-55	50-55	50-55	50-55
Public/Recreational	50-55	50-55	50-55	50-55
Agricultural	N/A	50-55	50-55	50-55
Vacant Land	40-45	40-45	40-45	40-45

Notes: [1]P.A. = Proposed Action (Industrial Airpark/Regional Airport).
Alt. 1 = General Aviation Alternative.
Alt. 2 = Business/Technology Center Alternative.
Alt. 3 = Recreation/Tourism Alternative.
[2]N/A = Not Applicable.

Table J-16

Biological Resource Impacts by Land Use Category, England AFB Reuse (acres of habitat disturbed)*

Land Use Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative
Airfield	0	0	0	0
Aviation Support	307	0	0	0
Industrial	15	15	15	0
Institutional (Medical)	0	0	0	0
Institutional (Educational)	0	0	0	0
Commercial	0	0	0	30
Residential	0	0	0	0
Public/Recreational	68	68	100	640
Agricultural	0	303	870	310
Vacant Land	0	0	0	0
Total:	**390**	**386**	**985**	**980**

Note: *Disturbance over the 1993-2013 period. Includes soil and wildlife habitat disturbance.

Table J-17

Cultural and Paleontological Resources Impacts by Land Use Category, England AFB Reuse

Land Use Category	Proposed Action	General Aviation Alternative	Business/Technology Center Alternative	Recreation/Tourism Alternative
Airfield	N.I.	N.I.	N.I.	N.I.
Aviation Support	Potentially NRHP-eligible sites associated with McNutt Plantation may be affected. However, avoidance is possible.	Same as Proposed Action.	N.I.	N.I.
Industrial	N.I.	N.I.	N.I.	N.I.
Institutional (Medical)	N.I.	N.I.	N.I.	N.I.
Institutional (Educational)	N.I.	N.I.	N.I.	N.I.
Commercial	N.I.	N.I.	N.I.	N.I.
Residential	N.I.	N.I.	N.I.	N.I.
Public/Recreational	N.I.	N.I.	N.I.	Potentially NRHP-eligible sites associated with McNutt Plantation may be affected. However, avoidance is possible.
Agricultural	N.I.	N.I.	Potentially NRHP-eligible sites associated with McNutt Plantation may be affected. However, avoidance is possible.	N.I.
Vacant Land	N.I.	N.I.	N.I.	N.I.

Note: N.I. = No impacts to NRHP-eligible sites.

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