

AD-A281 440



Environmental Assessment  
Realignment of the Air Force Reserve 940th  
Air Refueling Group to  
McClellan Air Force Base, California



DTIC  
SELECTED  
JUL 08 1994  
S B D

94-20851

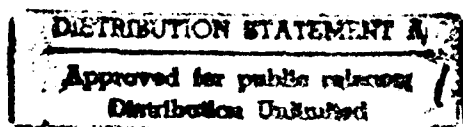


9728

DEPARTMENT OF THE AIR FORCE  
Sacramento-Air Logistics Center/  
McClellan Air Force Base, California

March 1993

DTIC QUALITY INSPECTED 3



94 7 7 065

**COVER SHEET  
ENVIRONMENTAL ASSESSMENT  
REALIGNMENT OF THE AIR FORCE RESERVE 940TH  
AIR REFUELING GROUP  
TO  
MCCLELLAN AIR FORCE BASE, CALIFORNIA**

- a. **Responsible Agency:** Department of the Air Force.
- b. **Proposed Action:** Realignment of the Air Force Reserve 940th Air Refueling Group (ARG) from Mather Air Force Base (AFB) to McClellan AFB, California.
- c. **Written comments and inquiries regarding this document should be directed to:** Brian Hovander, SM-ALC/EMRP, 3200 Peacekeeper Way, Suite 11, McClellan AFB, California, 95652-1036, (916) 643-0836.
- d. **Report Designation:** Environmental Assessment (EA).
- e. **Abstract:** Due to the changing international political scene and the resultant shift toward a reduction in defense spending, the Department of Defense must realign and reduce its military forces pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, Title XXIX). As a requirement of this law, the 940th ARG with its 10 KC-135E aircraft must realign from Mather AFB, California, which is scheduled to close in 1993, to McClellan AFB, California. This EA analyzes the potential environmental impacts from the realignment. As part of the realignment the Air Force is planning construction of 5 new buildings, 13 housing duplexes, an addition to 1 existing building, a hydrant fueling system, renovation to 14 existing facilities for interim and permanent use, and the demolition of 13 Wherry Housing units. Alternatives include the use of fuel trucks to fuel and defuel the aircraft instead of the hydrant fueling system (Fuel Truck Alternative), and siting the Squadron Operations Facility at three possible locations (Squadron Operations/Group Headquarters Alternatives A, B, and C). The No-Action Alternative would conflict with the Defense Base Closure and Realignment Act of 1990 and, therefore, cannot be implemented without a change in the law. Construction activities for the Proposed Action and alternatives would take place on a concrete aircraft parking apron, or on areas previously disturbed by past grading activities, except for less than 10 acres of undisturbed land required for new facilities. Aircraft maintenance/flight operations would be the same as those currently used by the 940th ARG at Mather AFB. This EA analyzes potential impacts from proposed activities on air quality, airspace, biological resources, cultural resources, hazardous materials/waste management, infrastructure, land use, noise, and water resources. No significant impacts to these resources would result from the Proposed Action or alternatives if specific mitigation measures are implemented.

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By <i>per letter</i>	
Distribution/	
Availability Codes	
List	Avail and/or Special
A-1	

## SUMMARY

This environmental assessment (EA) has been prepared to analyze the environmental consequences associated with realignment of the Air Force Reserve 940th Air Refueling Group (ARG) from Mather Air Force Base (AFB), California, to McClellan AFB, California. This document is prepared in compliance with the National Environmental Policy Act (NEPA) and the regulations of the President's Council on Environmental Quality (CEQ) for NEPA compliance, and Air Force Regulation 19-2, which implements these laws and regulations. Section 1.0, Purpose and Need for the Proposed Action, presents the purpose and need, scoping process for the EA, and applicable regulatory compliance and coordination. Section 2.0, Description of the Proposed Action and Alternatives, describes the project in detail, addresses alternatives, and summarizes project impacts and mitigation measures. Section 3.0, Affected Environment, provides a description of the potentially affected physical and human environments. Section 4.0, Environmental Consequences, describes the potential impacts of implementing the Proposed Action and alternatives and any mitigation measures required.

Due to the changing international political scene and the resultant shift toward a reduction in defense spending, the Department of Defense must realign and reduce its military forces pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510, Title XXIX). As a requirement of this law, the 940th ARG with its 10 KC-135E aircraft must realign to McClellan AFB, California, in fiscal year 1993, from Mather AFB, California, which is scheduled for closure in September, 1993. The need for the realignment is to support implementation of the Air Force plans to streamline its force structure and defense capability in response to evolving national security atmosphere and its need to reduce the budget and deficit by closing and realigning military installations. The continuation of the air refueling mission of the 940th ARG is necessary to maintain an effective total force structure.

The Proposed Action would require construction of 5 new buildings, 13 housing duplexes, an addition to 1 existing building, a hydrant fueling system, demolition of 13 Wherry Housing units, and renovation to 14 existing facilities for interim and permanent use. Construction activities for the Proposed Action would take place on a concrete aircraft parking apron, or areas previously disturbed by past grading activities, except for 8.5 acres of previously undisturbed land. Aircraft maintenance/flight operations would be the same as those currently used by the 940th ARG at Mather AFB; however, the 940th ARG would switch from JP-4 aircraft fuel currently used at Mather AFB to JP-8 at McClellan AFB.

Variations to the Proposed Action include the Fuel Truck Alternative and Squadron Operations/Group Headquarters Alternatives A, B, and C. The Fuel Truck Alternative is the same as the Proposed Action, except it would make use of fuel trucks to fuel and defuel the aircraft instead of the hydrant fueling system. The Squadron Operations/Group Headquarters Alternatives A, B, and C would be the same as the Proposed Action except the location of the Squadron Operation Facility would differ and there would be no demolition of Wherry Housing or construction of new housing. In addition, Alternative C would require the demolition of 2 facilities. The No-Action Alternative would be in conflict with the referenced law and would require a change of law to be implemented. However, the environmental consequences of this alternative can be used as a benchmark against which the decision maker can compare the magnitude of environmental effects of the proposed realignment. In order to compare the effects, the No-Action Alternative considered is the 940th ARG continuing operations at Mather AFB.

## SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Potential impacts to the natural and human environments resulting from the implementation of the Proposed Action and the alternatives would be minimized through project design and/or the application of existing federal, state, and Air Force rules and regulations, and/or mitigation measures. A brief summary of assessed resources is presented in the following paragraphs.

**Air Quality.** Both McClellan AFB and Mather AFB are located within the Sacramento Valley Air Basin (SVAB). No significant impacts to air quality are expected under the Proposed Action or alternatives. The regional increase in aircraft and ground operation emissions resulting from McClellan AFB operations would be offset by a similar decrease in emissions at Mather AFB. The net result would be a decrease in air pollutants in the SVAB by 16,646 pounds per year of reactive organic gases because of the requirement for the 940th ARG to change from JP-4 to JP-8 fuel. The JP-8 fuel which would be used by the 940th ARG at McClellan AFB requires no air quality permits or vapor recovery systems. Maintenance operations would be conducted to comply with air quality management district's rules and regulations. Potential impacts from construction (e.g. fugitive dust/construction equipment emissions) would be short-term and fugitive dust would be controlled by the application of water. Under the No-Action Alternative, aircraft and ground operation emissions would remain unchanged in the SVAB; therefore, no significant impacts would occur.

**Airspace.** Because the 940th ARG currently operates within the Sacramento region, there would be no change to airspace management or air traffic in the region upon realignment to McClellan AFB from any of the alternatives; therefore, no significant impacts would occur.

**Biological Resources.** No threatened or endangered species or sensitive habitats exist within the project areas; therefore, no significant impact to these resources would occur from implementation of the Proposed Action or any of the alternatives. However, under the Proposed Action and alternatives, the loss of common grassland species and the potential loss of mice, ground squirrels, and reptilian species could occur. More mobile species would be displaced from the area. However, no unique vegetation/wildlife habitat would be lost and no significant loss of wildlife species would occur. In addition, there would be a minor loss of ornamental vegetation, short-term construction related noise disturbances to wildlife species, and the potential for bird loss from increased flight activity. Under the No-Action Alternative there would be no construction or operational changes at McClellan AFB; therefore, no significant impacts would occur.

**Cultural Resources.** Areas proposed for ground-disturbing activities under the Proposed Action and all alternatives are located on either a concrete apron, existing paved areas, or surveyed areas that have been found to be devoid of prehistoric and historic archaeological sites, Native American resources, and paleontological resources. None of the buildings requiring demolition or renovation are more than 38 years old and none are located within the Sacramento Air Depot National Register Historic District. In addition, none demonstrate sufficient significance under any historic context to be considered eligible to the National Register of Historic Places (National Register). For these reasons, no adverse effects would occur to cultural resources from activities proposed for the Realignment of the 940th ARG; California State Historic Preservation Office concurs in the Air Force determination of no effect. Under the No-Action Alternative, no impacts to cultural resources would occur.

**Hazardous Materials/Waste Management.** Additional hazardous waste generated from implementation of the Proposed Action, Fuel Truck Alternative, or Squadron Operations Group/Headquarters Alternatives A, B, and C would not affect the hazardous waste management program on base. Buildings would be surveyed for asbestos, polychlorinated biphenyls and lead-based paint prior to demolition/renovation activities, and if discovered, these materials would be disposed in accordance with applicable regulations. Aircraft washdown solvents to be used by the 940th ARG may not be compatible with base oil/water separators; however, the 940th ARG would coordinate with McClellan AFB personnel to find an acceptable replacement compatible with oil/water separators. Soil sampling and literature searches on suspected Installation Restoration Program sites where construction would occur have identified potential oil/fuel-related contamination under aircraft parking Apron U and in a drainage channel south of this area. Construction in this area would not interfere with the base Installation Restoration Program, nor would remediation delay construction. Health impacts to construction workers could occur from contact with contaminated soils under Apron U and in the drainage channel. However, prior to construction, an accident prevention plan would be required by

the construction contractor prior to each phase of the construction project. This would include the measures to be taken to ensure the protection of construction workers from hazardous soils; therefore, no significant impacts would occur. Impacts from the Fuel Truck Alternative would be the same as for the Proposed Action except there would be no construction in contaminated soils under Apron U for the hydrant fueling system. Under the No-Action Alternative, no additional waste would be generated at McClellan AFB and there would be no construction on potentially contaminated sites; therefore, no significant impacts would occur.

**Infrastructure.** Under the Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C, there would be a 2 percent increase in infrastructure demand from increased personnel and a minor increase from operational activities. In addition, under the Proposed Action and Fuel Truck Alternative, a one-time increase of 11 percent to McClellan AFB's annual solid waste generation from the demolition of 13 Wherry Housing units would occur. However, the base and local off-base infrastructure capacities are adequate to handle the increase in demand; therefore, no significant impacts would occur from the realignment. Under the No-Action Alternative realignment to McClellan AFB would not occur; therefore, no significant impacts would occur.

**Land Use.** The Proposed Action and Fuel Truck Alternative would be compatible with the general land use character on base. Location of an operations facility next to family housing under these proposals is typical of military installations, which collocate diverse land uses according to maximum mission usefulness. The location of the 13 new housing units would have a beneficial effect by increasing the distance between the new accompanied housing and the flightline and other incompatible operational facilities. The off-base area exposed to the community noise equivalent level 65 contour would increase by 4 percent. The Squadron Operations/Group Headquarters alternatives would be compatible with the general character of established base land use pattern. Overall, impacts to land use from the realignment would not be significant. Under the No-Action Alternative, no increase in noise levels or construction activities at McClellan AFB would occur; therefore, no significant impacts to land use would occur.

**Noise.** Under the Proposed Action and Squadron Operations/Group Headquarters alternatives, 1 percent more of the off-base residents would be exposed to the community noise equivalent level 65 contour and above than under the baseline condition due to the minor increase in noise levels generated by 940th ARG aircraft. The Proposed Action would provide some beneficial impacts by locating 13 housing units further from the flightline. On-base noise levels to residents would be typical of Air Force installations with continued aircraft and industrial noise levels associated with the 940th ARG. Under the Fuel Truck Alternative, impacts would be the same as the Proposed Action except for the additional noise to on-base personnel associated with the use of fuel trucks. Under the No-Action Alternative there would be no increase in noise levels from McClellan AFB; therefore, no significant impacts would occur.

**Water Resources.** Under the Proposed Action, Fuel Truck, and Squadron Operations/Group Headquarters alternatives, potential impacts would be similar. The alternatives would use standard erosion control measures during construction to avoid soil runoff into the local water system. Hazardous waste spills and materials from construction and operations would be cleaned up, placed in containers, and disposed in accordance with McClellan AFB spill plans. In addition, industrial waste from aircraft washdown would be directed through an oil/water separator and then into the industrial waste line and would not come in contact with local water resources. Therefore, significant impacts to water resources would not be expected. Under the No-Action Alternative there would be no increase in soil erosion and no additional potential for hazardous spills to come in contact with water resources at McClellan AFB; therefore, no significant impacts would occur.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## TABLE OF CONTENTS

	<u>Page</u>
<b>SUMMARY</b> .....	<b>S-1</b>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>v</b>
<b>1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION</b> .....	<b>1-1</b>
1.1 PURPOSE AND NEED .....	1-1
1.2 DECISIONS TO BE MADE BY MCCLELLAN AFB .....	1-1
1.3 SCOPE OF THE ENVIRONMENTAL REVIEW .....	1-3
1.3.1 Physical Resources .....	1-3
1.3.2 Socioeconomics .....	1-3
1.4 APPLICABLE REGULATORY REQUIREMENTS AND COORDINATION .....	1-4
<b>2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES</b> .....	<b>2-1</b>
2.1 DESCRIPTION OF THE PROPOSED ACTION .....	2-1
2.1.1 Characteristics of the Aircraft Involved .....	2-1
2.1.2 Aircraft Operations .....	2-1
2.1.3 Ground Operations .....	2-1
2.1.3.1 Maintenance Activities .....	2-1
2.1.3.2 Flight Preparation Activities .....	2-3
2.1.4 Personnel Summary .....	2-3
2.1.5 Interim Use .....	2-4
2.1.6 Permanent Use Construction/Renovation .....	2-4
2.2 ALTERNATIVES TO THE PROPOSED ACTION .....	2-10
2.2.1 Fuel Truck Alternative .....	2-10
2.2.2 Squadron Operations/Group Headquarters Alternative A .....	2-10
2.2.3 Squadron Operations/Group Headquarters Alternative B .....	2-10
2.2.4 Squadron Operations/Group Headquarters Alternative C .....	2-12
2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER STUDY ...	2-12
2.4 NO-ACTION ALTERNATIVE .....	2-12
2.5 COMPARISON OF ENVIRONMENTAL IMPACTS .....	2-12
<b>3.0 AFFECTED ENVIRONMENT</b> .....	<b>3-1</b>
3.1 LOCATION, HISTORY, AND CURRENT MISSION OF THE INSTALLATION .....	3-1
3.1.1 Location .....	3-1
3.1.2 History .....	3-1
3.1.3 Current Mission .....	3-1
3.2 ENVIRONMENTAL SETTING .....	3-2
3.2.1 Air Quality .....	3-2
3.2.2 Airspace .....	3-6
3.2.3 Biological Resources .....	3-8
3.2.4 Cultural Resources .....	3-10
3.2.5 Hazardous Materials/Waste Management .....	3-11
3.2.6 Infrastructure .....	3-16
3.2.7 Land Use .....	3-18
3.2.8 Noise .....	3-20
3.2.9 Water Resources .....	3-25

## TABLE OF CONTENTS (Continued)

<b>4.0</b>	<b>ENVIRONMENTAL CONSEQUENCES</b>	<b>4-1</b>
<b>4.1</b>	<b>AIR QUALITY</b>	<b>4-1</b>
	4.1.1 Proposed Action and Alternatives	4-1
	4.1.2 Mitigation Measures	4-5
	4.1.3 Cumulative Impacts	4-5
<b>4.2</b>	<b>AIRSPACE</b>	<b>4-6</b>
	4.2.1 Proposed Action and Alternatives	4-6
	4.2.2 Mitigation Measures	4-6
	4.2.3 Cumulative Impacts	4-6
<b>4.3</b>	<b>BIOLOGICAL RESOURCES</b>	<b>4-7</b>
	4.3.1 Proposed Action and Alternatives	4-7
	4.3.2 Mitigation Measures	4-8
	4.3.3 Cumulative Impacts	4-8
<b>4.4</b>	<b>CULTURAL RESOURCES</b>	<b>4-9</b>
	4.4.1 Proposed Action and Alternatives	4-9
	4.4.2 Mitigation Measures	4-10
	4.4.3 Cumulative Impacts	4-10
<b>4.5</b>	<b>HAZARDOUS MATERIALS/WASTE MANAGEMENT</b>	<b>4-10</b>
	4.5.1 Proposed Action and Alternatives	4-10
	4.5.2 Mitigation Measures	4-13
	4.5.3 Cumulative Impacts	4-14
<b>4.6</b>	<b>INFRASTRUCTURE</b>	<b>4-14</b>
	4.6.1 Proposed Action and Alternatives	4-14
	4.6.2 Mitigation Measures	4-15
	4.6.3 Cumulative Impacts	4-15
<b>4.7</b>	<b>LAND USE</b>	<b>4-16</b>
	4.7.1 Proposed Action and Alternatives	4-16
	4.7.2 Mitigation Measures	4-17
	4.7.3 Cumulative Impacts	4-17
<b>4.8</b>	<b>NOISE</b>	<b>4-17</b>
	4.8.1 Proposed Action and Alternatives	4-17
	4.8.2 Mitigation Measures	4-21
	4.8.3 Cumulative Impacts	4-22
<b>4.9</b>	<b>WATER RESOURCES</b>	<b>4-22</b>
	4.9.1 Proposed Action and Alternatives	4-22
	4.9.2 Mitigation Measures	4-24
	4.9.3 Cumulative Impacts	4-24
<b>4.10</b>	<b>COMPATIBILITY OF THE PROPOSED ACTION WITH THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS AND POLICIES</b>	<b>4-24</b>
<b>4.11</b>	<b>UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS</b>	<b>4-24</b>
<b>4.12</b>	<b>RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY</b>	<b>4-25</b>
<b>4.13</b>	<b>IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES</b>	<b>4-25</b>
<b>5.0</b>	<b>GLOSSARY</b>	<b>5-1</b>
<b>6.0</b>	<b>CONSULTATION AND COORDINATION</b>	<b>6-1</b>



**TABLE OF CONTENTS**  
**(Continued)**

<b>7.0</b>	<b>LIST OF PREPARERS AND CONTRIBUTORS .....</b>	<b>7-1</b>
<b>8.0</b>	<b>DISTRIBUTION LIST .....</b>	<b>8-1</b>
<b>9.0</b>	<b>REFERENCES .....</b>	<b>9-1</b>

**Appendix A - Correspondence**

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
2-1 Hazardous Waste Generated at Mather AFB by the 940th ARG, Fiscal Year 1991 . . . .	2-2
2-2 940th ARG Interim and Permanent Use Facility Renovation . . . . .	2-6
2-3 Comparison of Alternatives . . . . .	2-14
3-1 National and California Ambient Air Quality Standards . . . . .	3-3
3-2 Existing Air Quality in the Area of McClellan AFB . . . . .	3-5
3-3 Air Pollutant Emissions at McClellan AFB, 1990 . . . . .	3-6
3-4 Air Quality Modeling Analysis for the Existing Conditions . . . . .	3-7
3-5 Federal and State Listed Species Potentially Occurring on McClellan AFB . . . . .	3-9
3-6 Typical Sound Levels . . . . .	3-21
3-7 Land Use Compatibility for Land Surrounding Public Use Airports . . . . .	3-23
4-1 McClellan AFB Annual Emissions Inventory including the Proposed Action . . . . .	4-2
4-2 Air Quality Modeling Analysis for McClellan AFB including the Proposed Action . . . . .	4-4
4-3 Noise Exposure Greater than CNEL 65 for the Proposed Action Off-Base . . . . .	4-18

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1-1 Regional Map . . . . .	1-2
2-1 Interim Use Facilities-940th ARG . . . . .	2-5
2-2a Proposed Permanent Facilities - 940th ARG . . . . .	2-7
2-2b Proposed Permanent Facilities - 940th ARG . . . . .	2-8
2-3 Squadron Operations/Group Headquarters Alternatives A and B - 940th ARG . . . . .	2-11
2-4 Squadron Operations/Group Headquarters Alternative C - 940th ARG . . . . .	2-13
3-1 Potential IRP Sites within Proposed Realignment Area . . . . .	3-15
3-2 McClellan AFB Land Use Categories . . . . .	3-19
3-3 McClellan AFB Baseline Noise Contours and Off-Base Land Use . . . . .	3-24
4-1 McClellan AFB Baseline Noise Contours Plus 940th ARG Operations . . . . .	4-19
4-2 Comparison of Proposed Action and Baseline Noise Contours . . . . .	4-20

## ACRONYMS AND ABBREVIATIONS

ACM	Asbestos-containing material
AFB	Air Force Base
AFR	Air Force Regulation
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
ARG	Air Refueling Group
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CNEL	Community Noise Equivalent Level
dBA	Decibels A-weighted
DBCRA	Defense Base Closure and Realignment Act
DOD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EDMS	Emissions and Dispersion Modeling System
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FIP	Federal Implementation Plan
FONSI	Finding of No Significant Impact
GPM	Gallons per minute
IRP	Installation Restoration Program
JP-4	Kerosene based jet fuel with gasoline component
JP-8	Kerosene based jet fuel
MGD	Million gallons per day
$\mu\text{g}/\text{m}^3$	Micrograms per cubic meter
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>2</sub>	Nitrogen dioxide
NO <sub>x</sub>	Nitrogen oxides
O <sub>3</sub>	Ozone
PCB	Polychlorinated biphenyl
PM <sub>10</sub>	Particulate matter less than 10 microns in diameter
RCRA	Resource Conservation and Recovery Act
ROG	Reactive organic gases
SIP	State Implementation Plan
SM-ALC	Sacramento Air Logistics Center
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO <sub>2</sub>	Sulfur dioxide
SPlan	Special Plan
SRCSD	Sacramento Regional County Sanitation District
SVAB	Sacramento Valley Air Basin
TRACON	Terminal Radar Approach Control
U.S.	United States

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION**

---

The National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing the Act (40 Code of Federal Regulations [CFR] Parts 1500-1508), Department of Defense (DOD) Directive 8050.1, and Air Force Regulation (AFR) 19-2, which implements these laws and regulations, direct that DOD and U.S. Air Force officials consider environmental consequences when authorizing or approving federal actions. Accordingly, this Environmental Assessment (EA) analyzes the potential environmental consequences of the siting and operational considerations of the realignment of the Air Force Reserve 940th Air Refueling Group (ARG) to McClellan Air Force Base (AFB), California (Figure 1-1).

### **1.1 PURPOSE AND NEED**

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

DBCRA established an independent Defense Base Closure and Realignment Commission ("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 became law. Among the Commission's recommendations was the realignment of the 940th ARG from Mather AFB, California, to McClellan AFB, California.

The realignment is needed to support implementation of the Air Force's plans to streamline its force structure and defense capability. These measures are in response to the evolving national security atmosphere and need to reduce the budget and deficit. To implement this, Mather AFB is scheduled for closure in September 1993. Closure of Mather AFB requires the realignment of the 940th ARG, currently located at the base. The continuation of the air refueling mission of this reserve unit is necessary to maintain an effective total force structure. Under public law, the 940th ARG will realign to McClellan AFB.

### **1.2 DECISIONS TO BE MADE BY MCCLELLAN AFB**

The decisions to be made by the Air Force regarding the realignment of the 940th ARG are to: (1) choose the siting and operational alternative that best minimizes potential adverse effects while maintaining operational requirements, and (2) select mitigation measures, to be implemented as part of the selected alternative, which would avoid, minimize, rectify, or reduce potential significant adverse effects to the environment.



### **1.3 SCOPE OF THE ENVIRONMENTAL REVIEW**

This EA describes and addresses the potential environmental impacts of conducting the realignment of the 940th ARG in accordance with DBCRA, with its associated construction and operation activities. The EA also evaluates the potential environmental impacts of the alternatives to the Proposed Action. Additionally, mitigation measures are suggested to reduce or eliminate potential environmental impacts identified as a result of the analysis.

Consistent with AFR 19-2 and the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that would result from implementation of the Proposed Action and alternatives. Initial analysis of the alternatives indicated that realignment would not result in either short- or long-term impacts to physical resources (i.e., soils, and topography) and socioeconomics. The rationale for not addressing these resources is presented in Sections 1.3.1 and 1.3.2.

Resources that have a potential for impact were considered in more detail in order to provide decision makers with sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI) (40 CFR Part 1508.9). The resources analyzed in more detail are: air quality, airspace, biological resources, cultural resources, hazardous materials/waste management, infrastructure, land use, noise, and water resources. Descriptions of the affected environment and the potential environmental consequences relative to these resources are addressed in Sections 3.0 and 4.0, respectively.

#### **1.3.1 Physical Resources**

The topography at McClellan AFB is characteristic of a relatively flat alluvial plain that has been dissected by tributaries of the Sacramento and American Rivers. Soils are of alluvial deposits, which consist of silt, sand, clay, and gravel deposited by streams that drained the Sierra Nevada Mountains. The majority of the proposed construction would take place on a concrete apron or on previously disturbed open areas except for less than 10 acres. Because of the limited amount of temporary soil disturbance, impacts to physical resources are not expected and not analyzed in further detail.

#### **1.3.2 Socioeconomics**

The realignment of the 940th ARG would be from Mather AFB to McClellan AFB. These two installations are located in Sacramento County, California. Because of the close proximity of the two AFBs (see Figure 1-1), realignment would not require 940th ARG personnel to relocate. In addition, no impacts to the biophysical environment from socioeconomic effects resulting from the realignment (e.g., the use of services around McClellan AFB instead of Mather AFB) would occur. Proposed construction associated with the realignment would make use of construction contractors from the Sacramento area (Nelson and Knaggs, 1992), and would provide an economic benefit to the community.

#### **1.4 APPLICABLE REGULATORY REQUIREMENTS AND COORDINATION**

In order to implement the proposed construction and operation activities of the Proposed Action and alternatives, specific regulatory requirements must be met and are discussed below.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has jurisdiction over the air quality aspects of the Proposed Action and alternatives. Specifically, the Authority to Construct and Permit to Operate would have to be issued by the SMAQMD. The Proposed Action or alternatives would have to meet the requirements of both the McClellan AFB Environmental Quality Protection Plan and the Sacramento 1991 Air Quality Attainment Plan. The Sacramento 1991 Air Quality Attainment Plan provides the basis for compliance with the California Clean Air Act (CAA) and the federal CAA and Amendments. To comply with the Attainment Plan McClellan AFB is reviewing its available emission credits for use under the Proposed Action. Emission credits represent the reduction (in pounds or tons per year) below a facility's baseline emission total (defined in the Attainment Plan), less any regulation-mandated reductions (e.g., reductions due to application of required emission control equipment). Credits can be used to offset increases in emissions due to new operations without the need for offsetting emission reductions in current operations, provided that each unit of pollution increase due to new operations, is offset by 1.3 units of credits. This means that an increase of 1 ton per year must be offset with 1.3 tons of emission credit. Credits are assessed for each pollutant separately, and cannot be exchanged from one pollutant type to another (e.g., nitrogen oxides [NO<sub>x</sub>] credits cannot be exchanged for increases in carbon monoxide [CO] emissions), unless specifically approved by the SMAQMD. Use of McClellan AFB's existing emission credits is currently being evaluated for application to the Proposed Action. In addition, McClellan AFB is currently negotiating with the SMAQMD to transfer air emission credits from Mather AFB at closure to McClellan AFB.

The SMAQMD is also the enforcing agency regarding asbestos management. The SMAQMD would be notified through a Notification of Demolition and Renovation of any proposed demolition/renovation project in accordance with the National Emission Standards for Hazardous Air Pollutants.



## **2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 DESCRIPTION OF THE PROPOSED ACTION**

In accordance with Public Law 101-510, Title XXIX, the 940th ARG is to be realigned to McClellan AFB from Mather AFB. Realignment would include moving 10 KC-135E aircraft, support personnel, and associated functions, supplies, and equipment to McClellan AFB in fiscal year 1993, prior to the closure of Mather AFB. New facility construction would be required at McClellan AFB to support the realignment. Interim use of existing facilities at McClellan AFB would be necessary until the construction of the new facilities is completed.

#### **2.1.1 Characteristics of the Aircraft Involved**

The KC-135E is a large aircraft primarily used for high-altitude refueling and cargo movement. The KC-135E is structurally similar to the Boeing 707 commercial airliner, but has a smaller diameter fuselage. Power is provided by four Pratt and Whitney TF33-102 turbo fan engines, which provide 18,000 pounds of thrust each. The range of the KC-135E is approximately 6,000 miles, with a typical operating altitude of 30,000 feet, and its transporting capacity is approximately 31,000 gallons of fuel. The KC-135E aircraft is similar to other aircraft operating at McClellan AFB, such as the C-135.

#### **2.1.2 Aircraft Operations**

Under the Proposed Action, 10 KC-135E aircraft would conduct approximately 85 air refueling training sorties and 340 closed patterns per month out of McClellan AFB. These operations would use existing air traffic patterns on takeoff and approach to McClellan AFB, while operating in the Sacramento Approach Control Area. Flights would be conducted on weekdays from 6:00 a.m. to 10:00 p.m. and two weekends per month from approximately 7:00 a.m. to 5:00 p.m. The flight activities of the 940th ARG would continue to use the same air refueling tracks used for current operations conducted out of Mather AFB.

#### **2.1.3 Ground Operations**

Ground operations would consist of maintenance and flight preparation activities for the 10 KC-135E aircraft.

**2.1.3.1 Maintenance Activities.** Maintenance operations for KC-135Es fall under the following organizational categories: fabrication, propulsion, aerospace systems, and aerospace ground equipment.

Within these categories, maintenance activities include corrosion control; composite repair; aircraft avionics, electrical system, radar, wheel and tire repair; jet engine, fueling system, structural and navigational/communication repairs; and aircraft washdown.

Materials used during these activities include lubricants, starter cartridges for the KC-135E engines, cleaning solvents, epoxies, oils, adhesives, hydraulic fluid, paint strippers, and lacquers. Small amounts of these materials would be stored in hazardous materials storage facilities located within each maintenance shop; the main supply would be located near the parking apron in a new facility (see Section 2.1.6). Engine starter cartridges would be stored in Building 876 which has been used for munition storage in the past. Prior to storage of these cartridges in this facility, the McClellan AFB Weapons Safety Officer would review proposed storage activities to ensure an appropriate safety distance is established and permits are obtained in accordance with DOD Standard 6055.9 (DOD Ammunition and Explosive Safety Standard). In addition to the above materials, the 940th ARG would use approximately 600 gallons of paint per year for aircraft touch-up and corrosion control. Painting would take place in the proposed Fuel System/Corrosion Control Dock.

Aircraft washdown would take place in the proposed Fuel System/Corrosion Control Dock. Fluids from this activity would be diverted into a new oil/water separator unit by the 940th ARG, where oils would be removed and containerized as hazardous waste. The remaining water would be released into the McClellan AFB industrial waste line. Prior to arrival of the 940th ARG, McClellan AFB would review the use of solvents to clean aircraft, and recommend an acceptable solvent which would not affect industrial waste treatment.

The quantity of hazardous wastes produced from the above materials during maintenance activities are shown in Table 2-1 and would be the same as those generated by the 940th ARG ground operations at Mather AFB. Hazardous waste generated would be handled in accordance with McClellan AFB's Resource Conservation and Recovery Act (RCRA) permit, and applicable federal, state, and local regulations.

Once hazardous waste is placed in containers, it would be transferred to the McClellan AFB Conforming Storage Facility, where it would be handled by the Defense Reutilization and Marketing Office (DRMO). Any hazardous materials/waste spills would be cleaned up in accordance with the Sacramento-Air Logistics Center (SM-ALC)/McClellan AFB Special Plan (SPlan) 19-2, Spill Prevention, Control, and Countermeasures SPlan 19-2 (U.S. Air Force, 1991). In addition, the 940th ARG would be required to provide a spill prevention plan for its activities and submit the plan to the Environmental Management Office for approval by the McClellan AFB Environmental Protection Committee. Personnel safety for all 940th ARG operations would be in accordance with applicable Occupational Safety and Health Administration, and U.S. Air Force Occupational Safety and Health regulations.

**Table 2-1. Hazardous Waste Generated at Mather AFB by the 940th ARG,  
Fiscal Year 1991**

Hazardous Waste	Amount Generated (pounds)
Paint waste	2,500
Oil/water separator wastes	6,500
Fluorescent light tubes	61
Battery lead acid*	540
Oils*	7,040
Shop rags*	500
Total	17,141

\* Recycled

**2.1.3.2 Flight Preparation Activities.** Flight preparation activities would include fueling the KC-135Es with JP-8 jet fuel. The 940th ARG would switch to JP-8 fuel from JP-4 upon realignment, because of the McClellan AFB requirement to reduce fuel emissions. The 940th ARG would use approximately 5.4 million gallons of JP-8 fuel per year to conduct all operations. The JP-8 fuel used by the 940th ARG would be supplied to two aboveground tanks, an existing 10,000-barrel tank (a barrel is equal to 42 gallons), and a new 10,000-barrel tank (see Section 2.1.6), from an existing Southern Pacific pipeline which currently serves McClellan AFB.

Fueling of the KC-135E would be conducted using a proposed hydrant fueling system, which would operate using the two aboveground fuel tanks with one looped underground fuel line. The fuel line would connect to 6 underground fuel pits located under the parking apron where the KC-135Es would be fueled. Defueling of the aircraft only occurs for specific repair functions and to meet fuel load requirements for individual missions. This system would be constructed in accordance with Air Force regulations regarding hydrant fueling systems. Safety devices associated with the hydrant fueling system include automatic fire detecting systems connected to the basewide system, sprinkler system, leak detection system for the length of the line, fire extinguishers, berms established around the fuel tank area to contain inadvertent spills, and portable and permanent eye wash devices. Prior to the completion of the hydrant fueling system, the 940th ARG would utilize fuel trucks to fuel the aircraft. Because the 940th ARG would use JP-8 fuel, there is no requirement by the SMAQMD to use vapor recovery devices. The proposed hydrant fuel system would be completed in fiscal year 1994. Potential fuel spills would be handled in the same manner as those described above for hazardous materials/waste spills.

If a KC-135E does land at McClellan with JP-4 fuel from another installation and requires defueling for maintenance, the fuel would be downloaded into fuel trucks and then placed in two underground tanks (which are permitted for JP-4) at the jet engine test cell. The JP-4 fuel would be used for jet engine runups or other programs on McClellan AFB. This facility currently has the appropriate vapor recovery systems required by its air quality permit.

As part of flight preparation activities, the 940th ARG would conduct approximately 20 to 25 engine run-ups per month. The engine run-ups would be conducted on Parking Apron U or V, with high-powered run-ups (above 80 percent power) being conducted on Apron V using stationary blast deflectors. To support engine run-ups, blast deflectors from Mather AFB would need to be relocated onto the parking aprons at McClellan AFB. In addition to engine run-ups, engine checks after maintenance would be conducted within existing hush houses at McClellan AFB.

#### **2.1.4 Personnel Summary**

Realignment of the 940th ARG would include moving approximately 250 full-time personnel and 1,350 reservists to McClellan AFB. Full-time personnel would be at McClellan AFB during the week and would also conduct training on the weekends. Although some training for reservists would be conducted daily, most training would be conducted two weekends per month and would consist of a primary training weekend (approximately 900 personnel) and an alternate training weekend (approximately 600 personnel). Additional reservist training (2 weeks per year) would continue at existing locations other than McClellan AFB.

### **2.1.5 Interim Use**

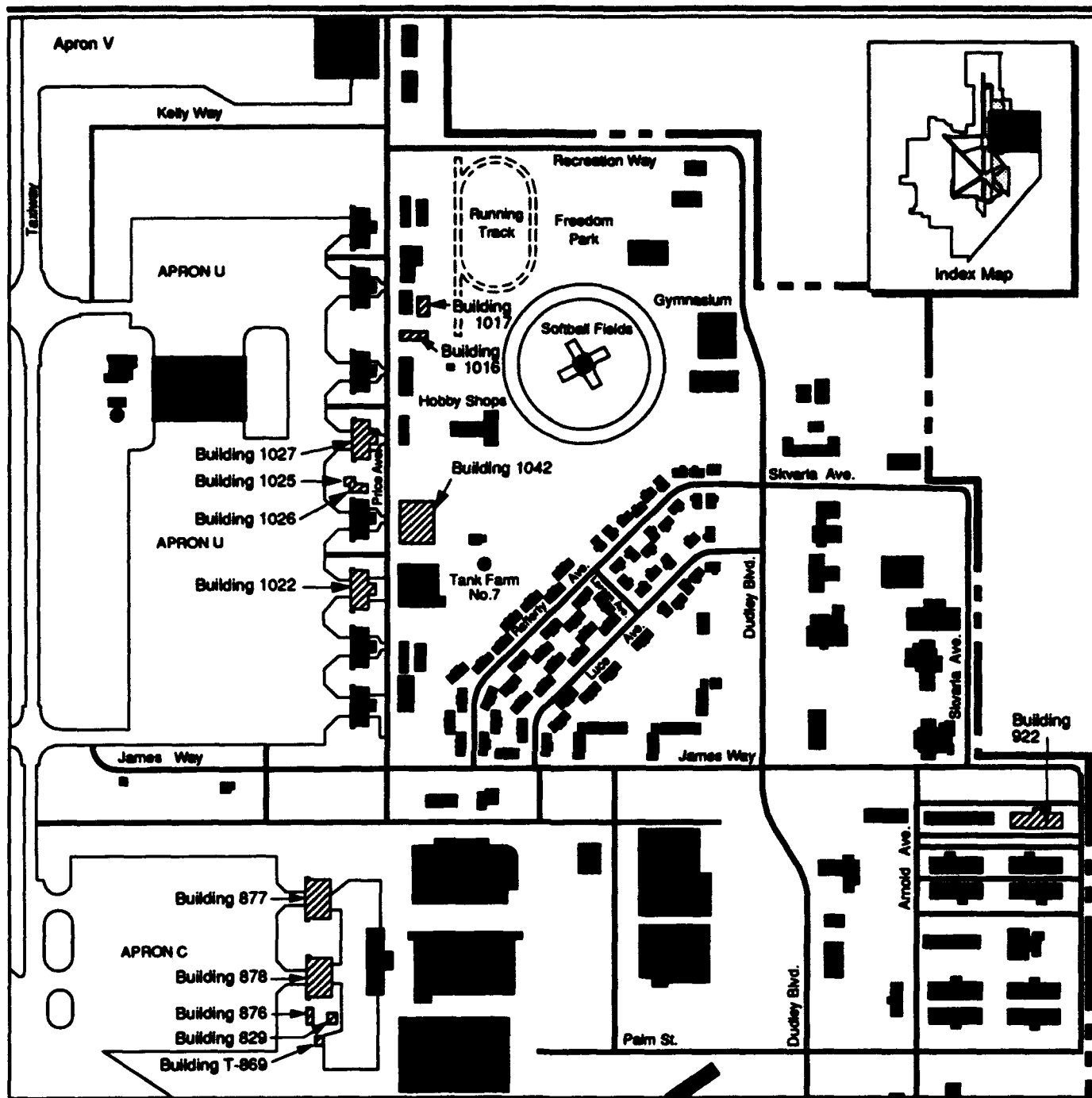
Permanent facility construction to support the realignment of the 940th ARG to McClellan AFB is expected to be completed by June 1995. From the date of the realignment in 1993 until completion of permanent facilities, the 940th ARG would use interim facilities (Figure 2-1), including some facilities shared with other McClellan AFB missions, to conduct administrative/maintenance activities. Some interior building renovation would be required to convert these facilities for the specific uses of the 940th ARG. Table 2-2 shows the facilities proposed for interim and permanent use. All facility renovation would be handled as described in Section 2.1.6, Permanent Use Construction/Renovation. Interim parking of the KC-135Es would include Parking Apron C while Apron U is being modified.

### **2.1.6 Permanent Use Construction/Renovation**

Under the Proposed Action, new facilities would be built and some existing facilities would be renovated (exterior/interior) in order to permanently support the 940th ARG mission (Figures 2-2a and 2-2b; Table 2-2). Conventional construction materials and methods would be used. Construction is planned to begin in fiscal year 1993, and would be completed in June 1995. Construction projects would be phased over this period with a small number of construction personnel and equipment required during any one phase.

Construction would take place in previously paved areas or areas disturbed by past grading except for the construction of housing, which would take place in an undisturbed field. New facilities to be constructed would include:

- **Fuel System/Corrosion Control Dock.** An approximately 26,700-square-foot maintenance hangar (0.6 acres) to support aircraft fuel systems and to accomplish aircraft washing. The facility would include an aqueous film-forming foam system used in fire suppression. For this system, a containment system would be designed to prevent concentrated slugs of fire suppression material from entering the wastewater system.
- **Hydrant Fueling System.** A pressurized, type III, 1,200-gallon-per-minute (GPM) hydrant fueling system. Construction would consist of a new 10,000-barrel aboveground fuel tank, a looped underground fuel line (from the fuel tanks to Parking Apron U), six fuel pits, approximately 2,550 linear feet of chain link fence around the fuel tank area, a pump house, two truck fueling stands, and a 1,350-square-foot training facility. Construction would require removal and replacement of part of the aircraft parking apron to locate the fuel lines and fuel pits underground, and demolition of the existing pump house and truck fueler stands at Fuel Tank Farm 7. Construction would also require relocation and installation of the blast fence on the parking apron. The hydrant fueling system would include fire protection systems, portable and permanent eye wash areas, spill prevention berms, and a fuel leak detection system.
- **Squadron Operations/Group Headquarters Facility.** An approximately 58,200-square-foot, two-story facility to support the 940th ARG training/operations. Construction would also include utilities, a parking lot, and security lighting. This facility would be located in the Wherry Housing area on McClellan AFB, requiring



# EXPLANATION

 Interim Facilities

## Interim Use Facilities-940th ARG

0 150 300 600 Feet



Figure 2-1

**Table 2-2. 940th ARG Interim and Permanent Use Facility Renovation\***

<b>Facility Number</b>	<b>Interim Use</b>	<b>Permanent Use<sup>2a</sup></b>
T-869	Squadron operations	None
829	Temporary storage facility	None
876	Munitions storage	Munitions storage
877	Squadron operations	None
878	Squadron operations	None
922	Headquarters/Administrative	None
1016 <sup>1a</sup>	Supervision maintenance	None
1017 <sup>1a</sup>	Field maintenance supervision, powered Aerospace Ground Equipment supervision, flightline and consolidated maintenance orderly room/55th Weather Reconnaissance Squadron	None
1022	Miscellaneous storage	Operations/Maintenance Branch, Flightline Section, non-powered Aerospace Ground Equipment
1025	Maintenance	None
1026	Maintenance	None
1027	Maintenance supply liaison	Forward supply and maintenance supply liaison
1033	None	Maintenance/55th Weather Reconnaissance Squadron
1042	Forward supply	Consolidated maintenance orderly room, avionics
1048	None	Field maintenance branch, aerospace systems, fabrication and propulsion branch
1071	None	Hangar/Organizational Maintenance, inspection requirements/55th Weather Reconnaissance Squadron

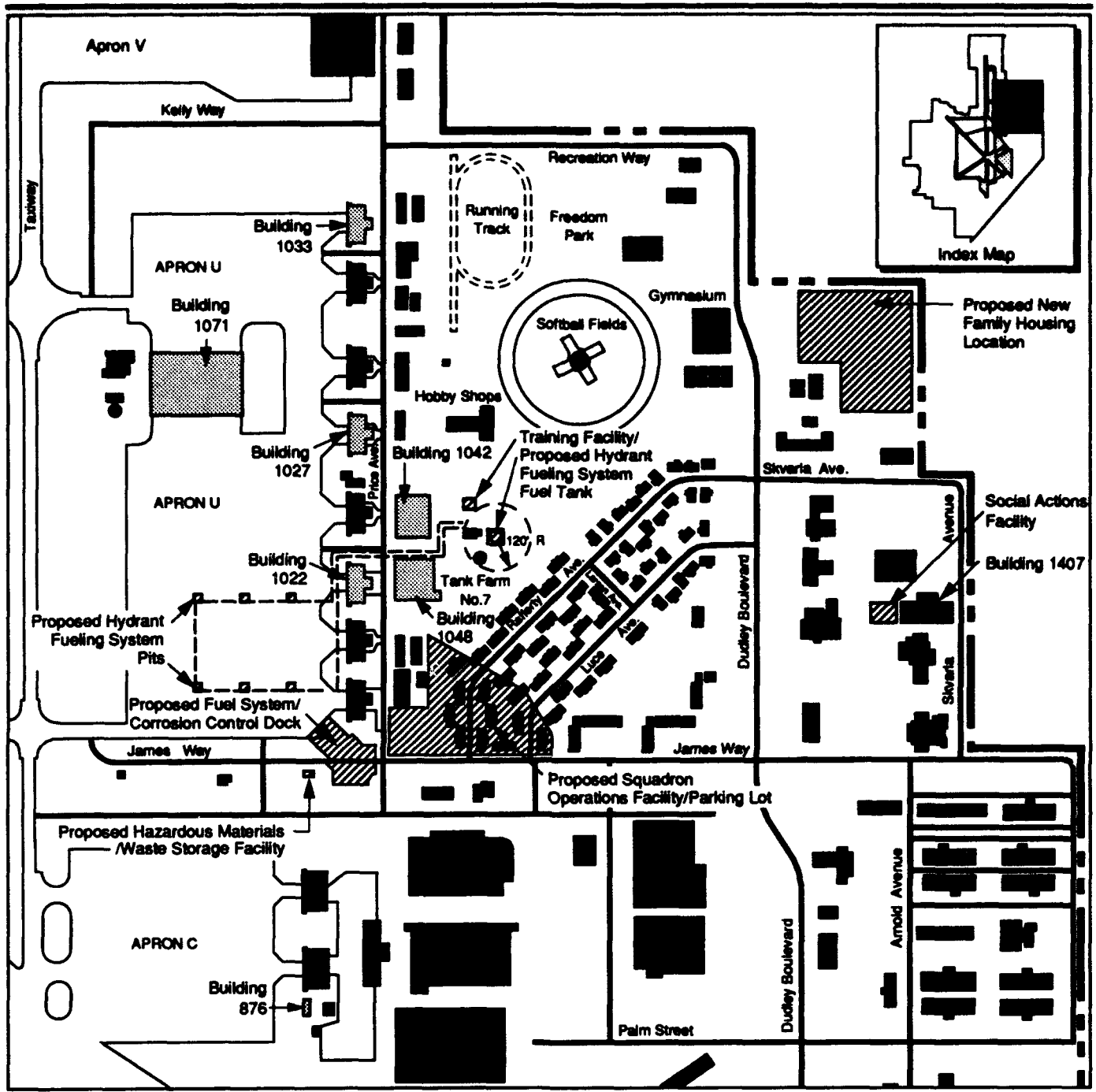
Notes: (a) These facilities will not require renovation.

(b) Facilities listed as "None" under permanent use will be returned for use by McClellan AFB after interim use.





\* All facilities used by the 940th ARG unless otherwise indicated.

the demolition of 13 occupied duplex units (26 families). Approximately 949 cubic yards of solid waste would be created from the demolition of the units.

- **New Housing.** In relocating the displaced families, one of the following would be considered: (1) 13 new housing duplexes to be built on an 8-acre, undisturbed field at McClellan AFB; (2) Capehart Housing at Mather AFB (McClellan AFB officials have requested that this housing be made available after the closure of Mather AFB in September 1993); and (3) off-base housing.



#### EXPLANATION

-  Proposed New Construction Locations
-  Buildings to be Modified
-  Proposed Underground JP-8 Fuel Lines
-  Explosive Safety Quantity Distance

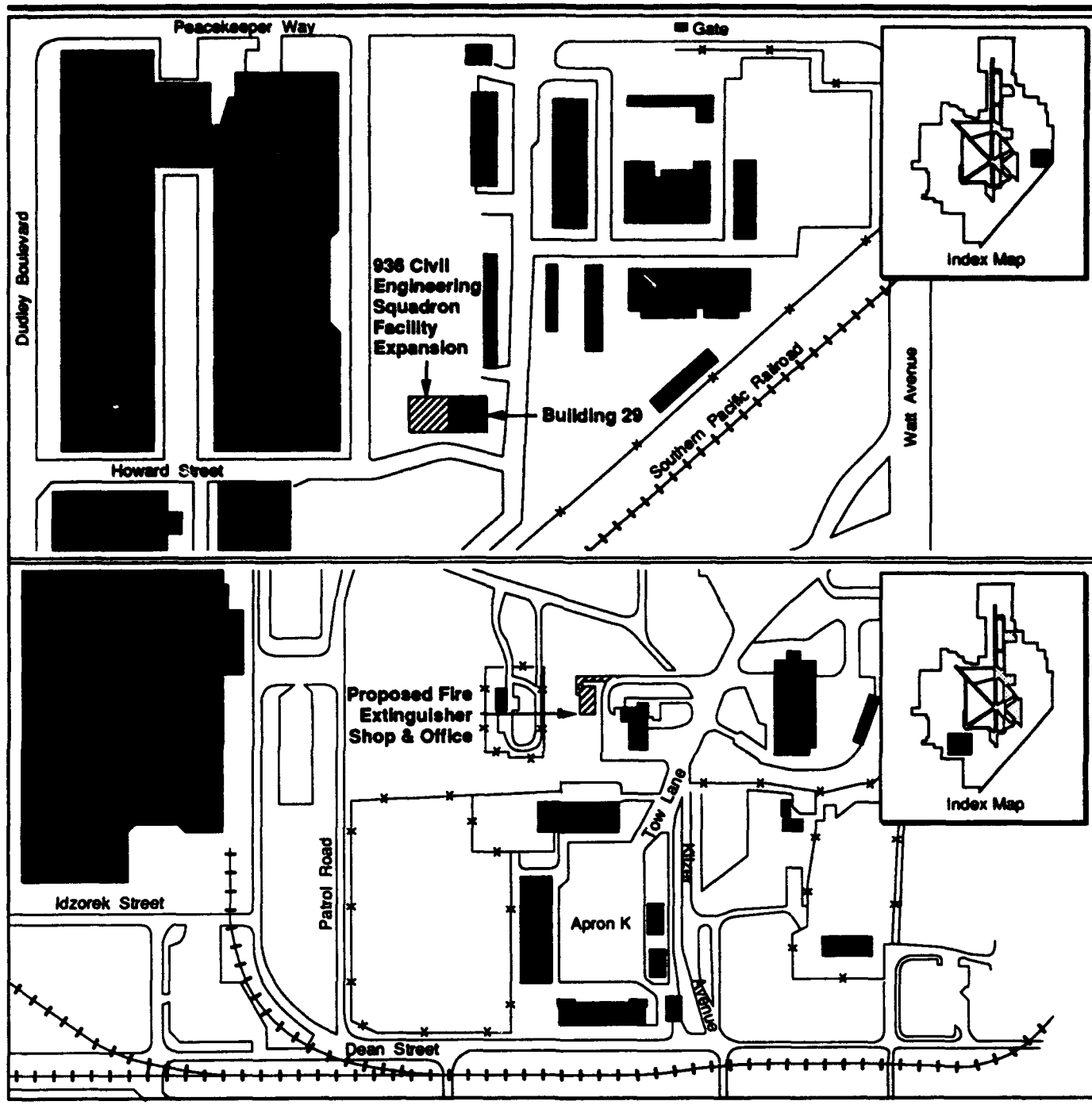
-  Proposed to be Demolished



ALC028-4

#### Proposed Permanent Facilities-940th ARG

Figure 2-2a



#### EXPLANATION



Proposed New Construction Locations

#### Proposed Permanent Facilities - 940th ARG



Figure 2-2b



- **Social Actions Facility.** An approximately 7,600-square-foot facility to support the Social Action Unit currently in Building 1042, which would be displaced by the 940th ARG. Construction would include utilities and parking.
- **Hazardous Materials/Waste Storage Facility.** An approximately 500-square-foot facility to support storage of hazardous materials (e.g., solvents and lubricants) and waste used by the 940th ARG.
- **Fire Extinguisher Shop and Office.** An approximately 6,000-square-foot facility (0.5 acres of ground disturbance) to support McClellan AFB fire extinguisher maintenance and storage of 940th ARG fire equipment (See Figure 2-2b).
- **936 Civil Engineering Squadron Facility.** An approximately 6,000-square-foot addition to Building 29 to support engineering services for the 940th ARG.

Construction requirements to support the realignment would include the following:

- Construction of administrative facilities and housing located in areas where noise levels are above a Day Night Level of 65 decibels are considered incompatible for this level and would require the use of sound attenuation material.
- During construction, erosion control would consist of silt fences, hay bales, or other such means or methods as determined by the designer. Dust would be controlled by watering.
- Solid and hazardous construction waste would be containerized and disposed off base by McClellan AFB personnel in accordance with federal, state, and local regulations.
- If a hazardous material/waste spill should occur from construction, the contractor would notify the base Fire Department.
- Staging areas for construction equipment and supplies would utilize concrete areas or previously disturbed areas.
- After construction, landscaping would make use of drought-tolerant plants.
- For interior building renovation, ventilation and plastic dust curtains would be utilized during work. The buildings proposed for demolition/renovation may contain asbestos, polychlorinated biphenyls (PCBs), and/or lead-based paint. These buildings would be surveyed prior to final design review. If asbestos, PCBs, or lead-based paint is found in the areas proposed for demolition/renovation and it cannot be avoided, it would be removed and disposed by McClellan AFB personnel or a certified contractor in accordance with applicable federal, state, and local regulations.
- Construction on Apron U and in the drainage channel south of this area may be in an area of soil contamination. Prior to construction, an accident prevention plan would be required to be written by the construction contractor prior to each phase of the construction project according to Occupational Safety and Health

Administration regulations (see Section 3.2.5). This plan would include the protection of construction workers from hazardous soils and would be reviewed by the McClellan AFB Safety Office and Surgeon General. Construction activities on potential Installation Restoration Program sites would be coordinated through regulatory agencies in accordance with the McClellan AFB Interagency Agreement (see Section 3.2.5).

- In the event there are any cultural resources encountered during the course of this undertaking, construction should cease in the immediate area and a qualified archaeologist consulted. Subsequent actions would comply with 36 CFR Part 800.11 and the Native American Graves Protection and Repatriation Act.

Title V of Public Law 100-77 (the Stewart B. McKinney Homeless Assistance Act, 1987) requires that any federal facility first be assessed by the Department of Housing and Urban Development for use by homeless persons prior to being disposed or sold. However, housing does not need to be assessed if demolition is required to make way for new construction. Because the Wherry Housing demolition would be required in order to construct a new facility under the Proposed Action, the housing does not need to be assessed as part of the McKinney Act.

## **2.2 ALTERNATIVES TO THE PROPOSED ACTION**

### **2.2.1 Fuel Truck Alternative**

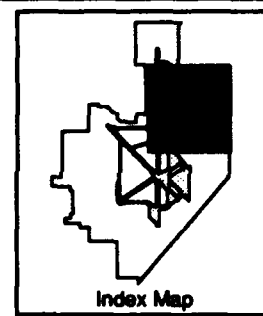
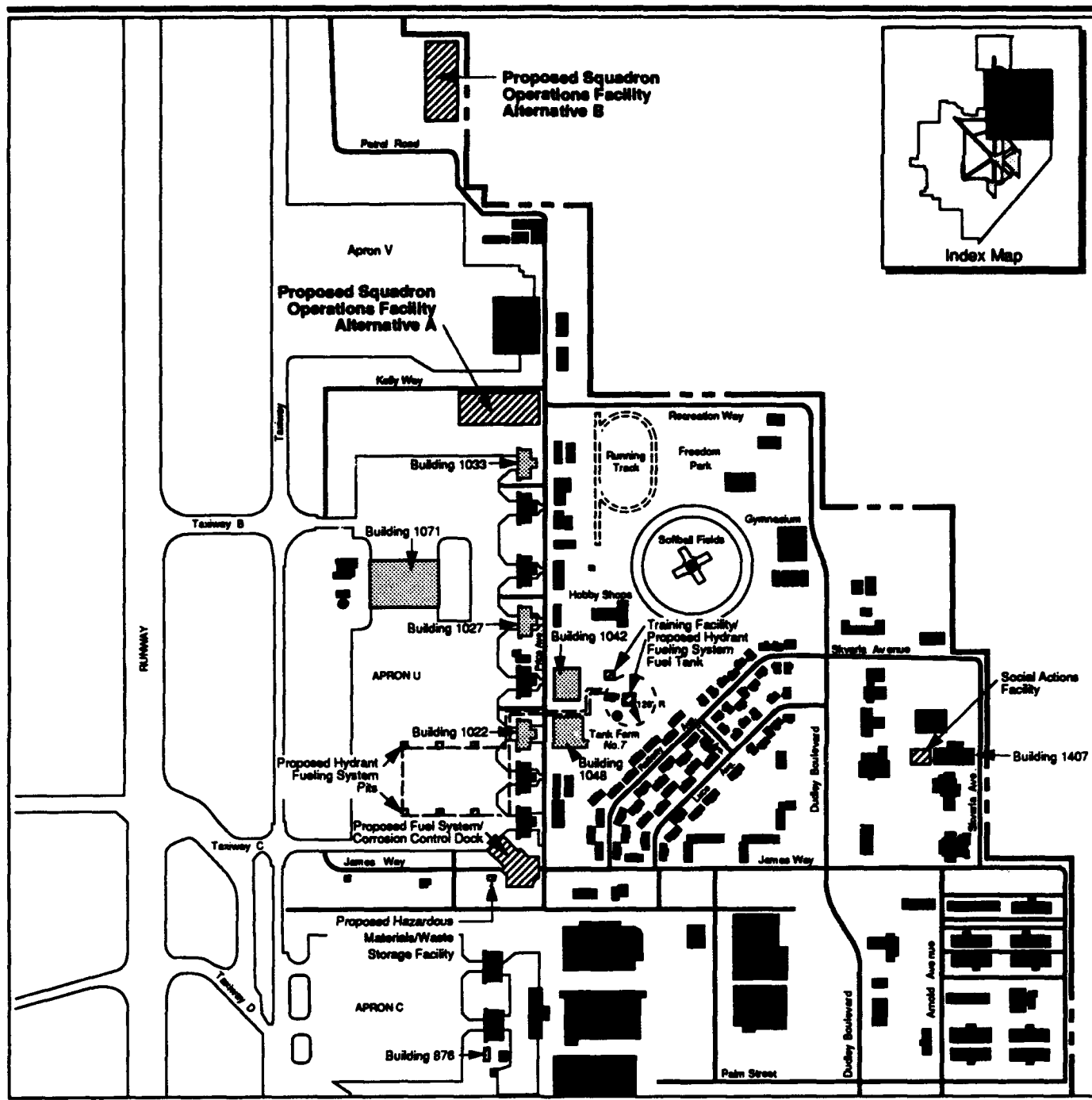
The Fuel Truck Alternative would be the same as the Proposed Action except the entire hydrant fueling system (e.g., tank, fuel pits, and fuel lines) would not be constructed for use by the 940th ARG. This alternative would require the use of fuel trucks to fuel and defuel the KC-135E aircraft. The average fuel load used by the 940th ARG on a KC-135E is approximately 12,500 gallons; a maximum load for the aircraft would be 31,000 gallons. The fueling of an average aircraft load would require three fuel truck loads, and a maximum fuel load would require seven fuel truck loads. Defueling of the aircraft, if required, would also use the fuel trucks. Fuel for this alternative would come from existing Fuel Tank Farms 7 and 10. Fuel Tank Farm 7 is shown on Figure 2-1; Fuel Tank Farm 10 is located at the southeast corner of the airfield.

### **2.2.2 Squadron Operations/Group Headquarters Alternative A**





This alternative would be the same as the Proposed Action except the Squadron Operations building would be located between Apron U and Apron V (Figure 2-3). The area between Aprons U and V consists of 90 percent pavement; the remainder is gravel. Alternative A would not require the demolition of Wherry Housing or construction of replacement housing.

### **2.2.3 Squadron Operations/Group Headquarters Alternative B**

This alternative would be the same as the Proposed Action except the Squadron Operations building would be located north of Apron V in an undisturbed area (approximately 5 acres). Alternative B would not require the demolition of Wherry Housing or construction of replacement housing (Figure 2-3).



# EXPLANATION

-  Proposed New Construction Locations
-  Buildings to be Modified
-  Proposed Underground JP-8 Fuel Lines
-  Explosive Safety Quantity Distance



## Squadron Operations/Group Headquarters Alternatives A and B- 940th ARG

Figure 2-3

#### **2.2.4 Squadron Operations/Group Headquarters Alternative C**

This alternative would be the same as the Proposed Action except the Squadron Operations building would be located south of Apron U in a disturbed field (approximately 2.5 acres) used for equipment storage. In addition, the Fuel System/Corrosion Control Dock would be located east of Apron U, and would require the demolition of Buildings 1020 and 1040 and the realignment of Price Avenue (Figure 2-4). The Life Support Function currently located in Building 1040 would be incorporated into the Squadron Operations building. Alternative C would not require the demolition of Wherry Housing or construction of replacement housing.

### **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER STUDY**

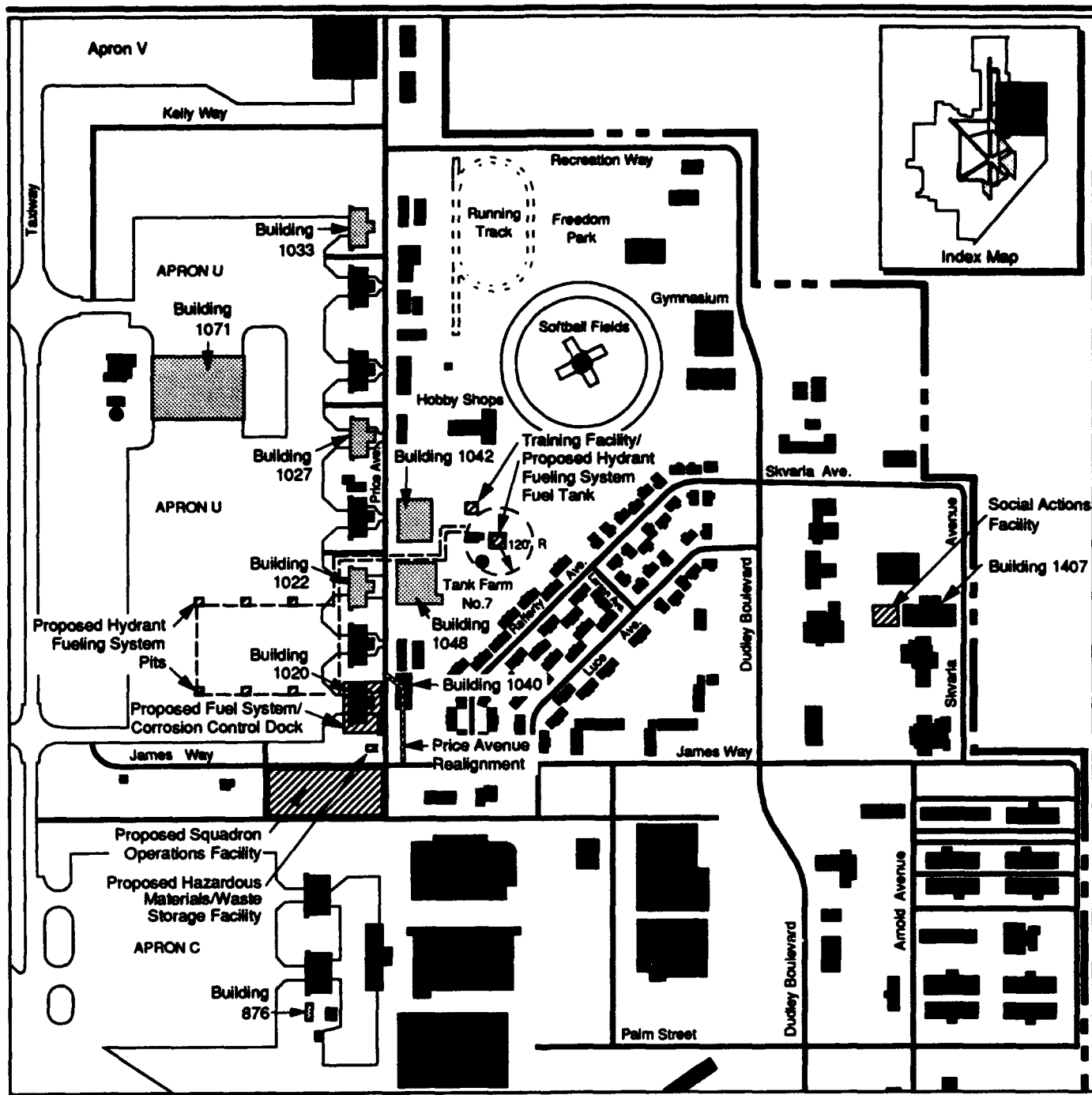
Other locations on McClellan AFB were reviewed during the siting process. Siting criteria for the realignment of the 940th ARG are: a parking apron structurally capable of handling the weight of a fully loaded KC-135E, sufficient apron area to accommodate up to 10 KC-135E aircraft; requirement for little or no modifications of existing facilities; and a location next to existing available buildings and open space which could meet the needs of the 940th ARG. After review of available McClellan AFB parking aprons and facilities, the West Site (Old Munitions Storage facility), and permanent use of Parking Apron C were eliminated from detailed study because Apron C is of insufficient size, and construction of a parking ramp at the West Site would be too costly. In addition, several locations west of the runway were considered for the Squadron Operations Facility. These sites were eliminated from detailed study because the sites are located on the opposite side of the runway from the other 940th ARG facilities. The area around Parking Apron U was the only viable alternative that met all the necessary criteria.

### **2.4 NO-ACTION ALTERNATIVE**






Under Public Law 101-510, Title XXIX (Defense Base Closure and Realignment Act of 1990), the 940th ARG is required to realign to McClellan AFB prior to the closure of Mather AFB in September 1993. The No-Action Alternative, under which the 940th ARG would not realign to McClellan AFB, would be in conflict with the referenced law and, therefore, could not be implemented unless the law is changed. However, the environmental consequences of the No-Action Alternative can be used as a benchmark against which the decision maker can compare the magnitude of environmental effects of the proposed realignment. Therefore, the No-Action Alternative considered for this analysis is the 940th ARG continuing operations at Mather AFB.

### **2.5 COMPARISON OF ENVIRONMENTAL IMPACTS**

This section presents comparative analysis of the Proposed Action and alternatives. A summary comparison of potential environmental effects resulting from implementation of the Proposed Action and alternatives is presented in Table 2-3. Detailed discussion of potential effects are presented in Section 4.0, Environmental Consequences.



#### EXPLANATION

- |   |                                     |   |                                      |
|---|-------------------------------------|---|--------------------------------------|
|  | Proposed New Construction Locations |  | Proposed Underground JP-8 Fuel Lines |
|  | Buildings to be Modified            |  | Explosive Safety Quantity Distance   |
|  | Proposed to be Demolished           |   |                                      |

#### Squadron Operations/Group Headquarters Alternative C-940th ARG



ALC031-2

Figure 2-4

Table 2-3. Comparison of Alternatives  
Page 1 of 4

Resource Category	Proposed Action	Fuel Truck Alternative	Squadron Operations Alternative A	Squadron Operations Alternative B	Squadron Operations Alternative C	No-Action Alternative
Air Quality	<ul style="list-style-type: none"> <li>• Impacts: Realignment from Mather AFB to McClellan AFB would not degrade regional air quality in the Sacramento Valley Air Basin. Minor short-term increase in fugitive dust and construction equipment emissions.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: No change to emissions in the Sacramento Valley Air Basin.</li> <li>• Mitigations: No mitigation required.</li> </ul>
	<ul style="list-style-type: none"> <li>• Impacts: No effect on air traffic control or airspace management.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: No change to airspace in the region.</li> <li>• Mitigations: No mitigation required.</li> </ul>
	<ul style="list-style-type: none"> <li>• Impacts: Minor loss of ornamental vegetation. Loss of 8.5 acres of common grassland/weedy species. Potential for loss of mice, ground squirrels, reptilian species, and displacement of more mobile species from construction. Short-term construction-related noise disturbance to wildlife species. Potential minor increase in bird loss from increased flight activities.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Loss of 0.5 acres of weedy species. Potential for loss of mice, ground squirrels, reptilian species, and displacement of more mobile species from construction. Other effects would be the same as the Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Loss of 5.5 acres of common grassland/weedy species. Potential for loss of mice, ground squirrels, reptilian species, and displacement of more mobile species from construction. Other effects would be the same as the Proposed Action.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Loss of 0.5 acres of weedy species would be the same as Alternative A. Loss of an additional 2.5 acres currently used for equipment storage.</li> <li>• Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: No impacts identified</li> <li>• Mitigations: No mitigation required.</li> </ul>
Airspace						
Biological Resources						

Table 2-3. Comparison of Alternatives  
Page 2 of 4

Resource Category	Proposed Action	Fuel Truck Alternative	Squadron Operations Alternative A	Squadron Operations Alternative B	Squadron Operations Alternative C	No-Action Alternative
Cultural Resources	<ul style="list-style-type: none"> <li>• Impacts: No impacts identified; however, slight potential to uncover cultural material during ground disturbing activities does exist.</li> <li>• Mitigations: If any cultural materials are unexpectedly discovered during the course of the program activities, construction should cease in the immediate area and a qualified archaeologist consulted. Subsequent actions would comply with 36CFR Part 800.11 and the Native American Graves Protection and Repatriation Act.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action.</li> <li>• Mitigations: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: No impacts identified</li> </ul>
Hazardous Materials/ Waste Management	<ul style="list-style-type: none"> <li>• Impacts: Additional hazardous waste generated from construction/operations. Aircraft washdown solvent may not be compatible with operation of oil/water separators. Asbestos, PCBs, and lead-based paint would be removed prior to demolition/renovation of buildings and disposed according to applicable regulations. Construction under Apron U and in the drainage channel south of this area may be in contaminated soils. However, it would not affect remediation of the site or delay construction. Health and safety measures would protect construction workers from potential contaminated soils.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action, except no construction in contaminated soils under Apron U for the hydrant fueling system.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Proposed Action, except amount of hazardous construction debris would be less because there would be no demolition of Wherry Housing.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Alternative A.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: Same as Alternative A, except potential for additional hazardous construction debris from demolition of two operational facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts: No impacts identified.</li> </ul>

Table 2-3. Comparison of Alternatives  
Page 3 of 4

Resource Category	Proposed Action	Fuel Truck Alternative	Squadron Operations Alternative A	Squadron Operations Alternative B	Squadron Operations Alternative C	No-Action Alternative
Hazardous Materials/ Waste Management (Continued)	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>The 940th ARG would coordinate with McClellan AFB personnel to find an acceptable solvent compatible with oil/water separators.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul>
	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>A 2 percent increase to infrastructure demand on base from personnel and minor increase from operations. Current base capacity adequate to handle additional load. A one-time 11 percent increase in construction debris from demolition of Wherry Housing.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as the Proposed Action, except for no construction debris from demolition of Wherry Housing.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Alternative A, except additional solid waste generation from demolition of 2 buildings and a portion of Price Avenue.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>No impacts identified.</p>
Land Use	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>
	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Compatible with general land use character on base. Locates operational facility next to family housing. Beneficial effect by increasing distance of new housing from flightline and other incompatible operational facilities. A 4 percent increase in land use exposed to the community noise equivalent level 65 contour or above.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>On-base land use compatible with general character of McClellan AFB. Off-base land use same as Proposed Action.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Alternative A.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>Same as Alternative A.</p>	<ul style="list-style-type: none"> <li>• Impacts:</li> </ul> <p>No impacts identified.</p>
	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigations required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>	<ul style="list-style-type: none"> <li>• Mitigations:</li> </ul> <p>No mitigation required.</p>



Table 2-3. Comparison of Alternatives  
Page 4 of 4

Resource Category	Proposed Action	Fuel Truck Alternative	Squadron Operations Alternative A	Squadron Operations Alternative B	Squadron Operations Alternative C	No-Action Alternative
Land Use (Continued) Noise	<ul style="list-style-type: none"> <li>Impacts: An approximately 1 base population (residents) exposed to community noise equivalent level 65 or above. Increased noise levels on-base would be typical of Air Force installation. Squadron Operations facility and housing would be constructed in areas of incompatible noise levels.</li> <li>Mitigations: Appropriate sound attenuation would be incorporated into new building and housing design to reduce noise levels.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Same as Proposed Action, except for increased fuel truck noise levels to on-base residents.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Same as Proposed Action, except for no beneficial effects from construction of new housing further from the flightline.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Same as Alternative A.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Same as Alternative A</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Continuation of current off-base and on-base noise levels at McClellan AFB.</li> </ul>
	<ul style="list-style-type: none"> <li>Impacts: Potential for increased short-term water degradation from construction-related soil erosion. No effect on surface water hydrology, groundwater resources or water quality from operations. Would not restrict 100-year floodplain.</li> <li>Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Impacts: Same as Proposed Action, except for the potential for increased fuel spills because of additional handling.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: Appropriate sound attenuation would be incorporated into new building design to reduce noise levels.</li> <li>Impacts: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: Same as Alternative A.</li> <li>Impacts: Same as Proposed Action.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: Same as Alternative A</li> <li>Impacts: Same as Proposed Action</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> <li>Impacts: No impacts identified.</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>Impacts: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> </ul>	<ul style="list-style-type: none"> <li>Mitigations: No mitigation required.</li> </ul>

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **3.0 AFFECTED ENVIRONMENT**

---

This chapter describes the existing environmental conditions at McClellan AFB. The environmental components addressed include relevant natural or human environments that are likely to be affected by the Proposed Action and alternatives.

Based on the installation and operational characteristics of the Proposed Action and alternatives (Section 2.0), it was determined that the potential exists for the following resources to be affected: air quality, airspace, biological resources, cultural resources, hazardous materials/waste management, infrastructure, land use, noise, and water resources.

### **3.1 LOCATION, HISTORY, AND CURRENT MISSION OF THE INSTALLATION**

#### **3.1.1 Location**

McClellan AFB occupies approximately 2,856 acres at the northeast corner of the city of Sacramento. The installation is located immediately north of Interstate 80 and is near a main railroad line operated by the Southern Pacific Railroad Company. Lands surrounding the installation are within the jurisdiction of the city of Sacramento or are unincorporated and within the jurisdiction of the county of Sacramento.

#### **3.1.2 History**

McClellan AFB was authorized for construction by Congress in 1936 as the Sacramento Air Depot. The base was dedicated in 1939 and named McClellan Field in honor of Major Hezekiah McClellan (U.S. Air Force, 1987).

During World War II the base provided air logistics support to the Pacific region. In the 1950s, activity shifted from the Sacramento Air Depot to a fighter depot, and the SM-ALC responsibilities increased to providing worldwide logistics. In the 1960s the SM-ALC gained responsibility for certain ballistic missile activities, and for the F-111 fighter bomber aircraft. Today, the center continues to be a fighter maintenance and support facility, and manages F/FB/EF-111, A-10, A-7, KC-135, and F-117A aircraft maintenance.

Base employment during World War II increased from a few thousand to more than 18,000 employees. Following World War II, base employment increased from 18,000 to over 23,000 personnel in 1987. Of this 1987 total, approximately 14,700 employees were civilian personnel, approximately 1,500 were contract support service employees, and the remaining 7,000 were military personnel (U.S. Air Force, 1987). In 1991, total installation employment was approximately 16,400 personnel, with current employment at approximately 12,500.

#### **3.1.3 Current Mission**

The mission of the SM-ALC is twofold: (1) to provide worldwide logistics support of assigned weapons systems, equipment, and commodity items; and (2) to perform industrial activities

including materials fabrication, metal plating, electronics assembly, and materials storage that relate to providing maintenance, supply, and contracting services essential to Air Force logistics.

Aircraft at McClellan AFB include both transient and based aircraft. Based aircraft include A-10, C-21, C-130, C-135, KC-135, F-15, F-111, T-38, and UH-1. Transient aircraft which use McClellan AFB include the types listed above and C-5, C-12, C-20, C-22, C-141, F-4, P-3, T-37, T-43 and U2. For more details on flying operations see Section 3.2.8.

## **3.2 ENVIRONMENTAL SETTING**

### **3.2.1 Air Quality**

The main pollutants considered in this EA are ozone ( $O_3$ ), carbon monoxide (CO), nitrogen oxides ( $NO_x$ ), reactive organic gases (ROG), sulfur dioxide ( $SO_2$ ), and particulate matter less than 10 microns in diameter ( $PM_{10}$ ). ROG and  $NO_x$ , which include all oxide species of nitrogen, are considered in the air quality analysis in terms of their potential contribution to ozone formation. Only that portion of total  $NO_x$  which is measurable as the species nitrogen dioxide ( $NO_2$ ) is subject to federal and state standards. Federal standards have been established by the U.S. Environmental Protection Agency (EPA) and termed the National Ambient Air Quality Standards (NAAQS). State standards have been established by the California Air Resources Board and are termed the California Ambient Air Quality Standards (CAAQS). The NAAQS and CAAQS are presented in Table 3-1.

For the purpose of air quality analysis, the region of influence for emissions of ozone precursors from the project's construction and operational activities is the existing airshed surrounding McClellan AFB. This airshed is the Sacramento Valley Air Basin (SVAB), which includes Shasta, Tehama, Glenn, Butte, Colusa, Sutter, Yuba, Yolo, and Sacramento counties, as well as portions of Placer and Solano counties. The Sacramento County portion is under the jurisdiction of the SMAQMD. Project emissions of ROG and  $NO_x$  are compared to emissions generated within the SVAB. The region of influence for emissions of pollutants CO,  $SO_2$ , and  $PM_{10}$  is limited to the more immediate area of McClellan AFB; therefore, project-related emissions of these pollutants are compared to emissions from the Sacramento County portion of the SVAB as a means of assessing potential impacts to air quality (U.S. Air Force, 1992a). Current 940th ARG operations are conducted at Mather AFB, which is located in the SVAB approximately 7 direct miles from McClellan AFB. 940th ARG operations at Mather AFB currently use a hydrant fueling system and JP-4 fuel which generates approximately 16,756 pounds of ROG per year. Aircraft flight training (fueling of airborne aircraft) for the 940th ARG occurs in air refueling tracks, which are mostly located outside the SVAB.

**Regulations.** The Federal CAA, 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, state, and local 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.

**Table 3-1. National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>(a,e)</sup>	National Standards <sup>(b)</sup>	
			Primary <sup>(c,d)</sup>	Secondary <sup>(c,d)</sup>
Ozone (O <sub>3</sub> )	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	0.12 ppm (235 µg/m <sup>3</sup> )	Same as primary standard
Carbon monoxide (CO)	8-hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	—
	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	—
Nitrogen dioxide (NO <sub>2</sub> )	Annual average	—	0.053 ppm (100 µg/m <sup>3</sup> )	Same as primary standard
	1-hour	0.25 ppm (470 µg/m <sup>3</sup> )	—	—
Sulfur dioxide (SO <sub>2</sub> )	Annual average	—	0.03 ppm (80 µg/m <sup>3</sup> )	—
	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm (365 µg/m <sup>3</sup> )	—
	3-hour	—	—	0.5 ppm (1,300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (855 µg/m <sup>3</sup> )	—	—
Particulate Matter (PM <sub>10</sub> )	Annual	30 µg/m <sup>3</sup> <sup>(f)</sup>	50 µg/m <sup>3</sup> <sup>(g)</sup>	Same as primary standard
	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	
Sulfates	24-hour	25 µg/m <sup>3</sup>	—	—
Lead	30-day	1.5 µg/m <sup>3</sup>	—	—
	Quarterly	—	1.5 µg/m <sup>3</sup>	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m <sup>3</sup> )	—	—
Vinyl chloride	24-hour	0.010 ppm (26 µg/m <sup>3</sup> )	—	—
Visibility <sup>(h)</sup>	8-hour (10 a.m. to 6 p.m.)	In sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70 percent. ARB Method V.		—

**Notes:**

- California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, particulate matter, and visibility reducing particulates are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride, are not to be equaled or exceeded.
- National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year, with maximum hourly average concentrations above the standards, is equal to or less than one.
- Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury. All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibars); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of pollutant.
- Calculated as geometric mean.
- Calculated as arithmetic mean.
- This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range when relative humidity is less than 70 percent.

ppm = parts per million

km = kilometer

ARB = Air Resources Board

µg/m<sup>3</sup> = micrograms per cubic meter

mg/m<sup>3</sup> = milligrams per cubic meter

**Climate.** The SVAB encompasses several counties extending north from Sacramento County to Shasta County and is bounded by the Sierra Nevada to the east and the Coastal Ranges to the west. Prevailing winds are usually oriented along the major axis of the Sacramento Valley, approximately following a southeast-northwest pattern. In the winter, northerly and southerly flow patterns are predominant during the day, while calm conditions predominate during the late evening and early morning. During spring and summer, the predominant flow pattern is the delta or sea breeze. Northerly winds and the sea breeze predominate in the fall. Full sea breeze conditions occur 29 percent of the year; northerly winds occur 20 percent of the year.

The climate in the SVAB is moderate, with mild winters and hot, dry summers. Monthly average maximum temperatures range from 53° to 54°F in January to 93° to 98°F in July. Mean annual precipitation from 1939 to 1986 in the SVAB was approximately 21 inches. Approximately 90 percent of the rainfall occurs between November and April and is associated with Pacific storms, which are frequent in winter.

**Regional Air Quality.** According to U.S. EPA guidelines, an area with air quality better than or equal to the NAAQS is designated as being in attainment; a nonattainment designation for a specific pollutant is given to a region if the primary NAAQS for that criteria pollutant is exceeded. Pollutants in an area may be designated as unclassified when there is a lack of data for the U.S. EPA to form a basis of attainment status. The California Air Resources Board also designates areas of the state as either in attainment or nonattainment of the CAAQS. Sacramento County is: (1) in nonattainment of the federal and state standards for O<sub>3</sub> and CO, and the state standards for PM<sub>10</sub>; (2) in attainment of the federal and state standards for NO<sub>2</sub> and the state standards for SO<sub>2</sub>; and (3) unclassified for the federal PM<sub>10</sub> and SO<sub>2</sub> standards (Air Resources Board, 1991). However, the U.S. EPA has recently proposed that Sacramento County be classified as nonattainment for the federal PM<sub>10</sub> standard. In addition, categories of nonattainment (marginal, moderate, serious, severe, and extreme for O<sub>3</sub>; moderate and severe for CO) have been established for both federal and state standards. Sacramento County is classified as being in serious nonattainment of both the NAAQS and the CAAQS for O<sub>3</sub>, and in moderate nonattainment of the NAAQS and in serious nonattainment of CAAQS for CO.

New stationary sources in nonattainment areas are required by the CAA to install the Best Available Control Technology and are required to offset new emissions. In other than marginal nonattainment areas, new emissions must be offset with a greater than one-for-one reduction from other sources above and beyond those which would otherwise be required.

The SMAQMD currently operates air quality monitoring stations throughout Sacramento County. Stations located in the vicinity of McClellan AFB include Del Paso Manor and the North Highland-Blackfoot station. The North Highlands monitoring station is located at McClellan AFB, while the Del Paso Manor station is located approximately one mile southeast of the base. Data from the two stations are contained in Table 3-2.

**Baseline Conditions.** The baseline emissions for operations at McClellan AFB are presented in Table 3-3. These emissions were obtained in part from the base emission inventory information prepared by the SMAQMD (SMAQMD, 1992). The following changes were made to the inventory to more accurately reflect current operations:

Table 3-2. Existing Air Quality in the Area of McClellan AFB

Pollutant	Monitoring Station	Averaging Period	Limiting Standard <sup>(a)</sup>	Number of Times Federal Standard Exceeded			Number of Times California Standard Exceeded			Maximum Concentration ppm (µg/m <sup>3</sup> )	
				1989	1990	1991	1989	1990	1991	1989	1991
Carbon monoxide	Del Paso	8-hour	9 ppm	13	4	0	13	4	0	13.0 (15,080)	8.0 (9,280)
	North Highlands			ND	0	0	ND	0	0	5.3 (6,150)	5.3 (6,150)
Del Paso		1-hour	20 ppm	0	0	0	0	0	0	15.0 (17,400)	11.0 (12,760)
	North Highlands			ND	0	0	ND	0	0	8.0 (9,280)	9.0 (10,440)
Nitrogen dioxide	Del Paso	Annual	0.053 ppm	0	0	0	NA	NA	NA	0.021 (40.1)	0.028 (53.5)
	North Highlands			ND	0	0	NA	NA	NA	0.018 (34.4)	0.009 (17.2)
Del Paso		1-hour	0.25 ppm	NA	NA	NA	0	0	0	0.13 (248)	0.17 (325)
	North Highlands			NA	NA	NA	ND	0	0	0.09 (172)	0.13 (248)
Ozone	Del Paso	1-hour	0.09 ppm	0	6	5	16	65	27	0.12 (235)	0.18 (358)
	North Highlands			ND	0	1	ND	10	9	0.12 (235)	0.13 (259)
Sulfur dioxide	Del Paso	Annual	0.03 ppm	0	0	0	NA	NA	NA	0.002 (5.3)	0.003 (8.0)
	North Highlands			ND	0	0	NA	NA	NA	0.008 (15.9)	0.002 (5.3)
Del Paso		24-hour	0.04 ppm	0	0	0	0	0	0	0.012 (31.8)	0.016 (42.4)
	North Highlands			ND	0	0	ND	0	0	0.011 (28.2)	0.010 (26.5)
Del Paso		1-hour	0.25 ppm	NA	NA	NA	0	0	0	0.04 (106)	0.03 (79.5)
	North Highlands			NA	NA	NA	ND	0	0	0.02 (53.0)	0.03 (79.5)
PM <sub>10</sub>	Del Paso	Annual	30 µg/m <sup>3</sup>	NA	NA	NA	1	0	1	33.2 µg/m <sup>3</sup> <sup>(b)</sup>	- (31.9)
	North Highlands	(geometric)		NA	NA	NA	ND	0	0	- (32.2)	- (27.3)
Del Paso		Annual	50 µg/m <sup>3</sup>	0	0	0	NA	NA	NA	40.3 µg/m <sup>3</sup> <sup>(b)</sup>	- (42.3)
	North Highlands	(arithmetic)		ND	0	0	NA	NA	NA	- (37.4)	- (33.3)
Del Paso		24-hour	50 µg/m <sup>3</sup>	0	1	0	12	13	5	142 µg/m <sup>3</sup>	- (127)
	North Highlands			ND	0	0	ND	12	5	- (96)	- (96)

Notes: NA = Not Applicable.

ND = No data.

(a) Limiting standard is the more stringent of the NAAQS and CAAQS, as shown in Table 3-1.

(b) Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA and/or ARB criteria for representative samples

**Table 3-3. Air Pollutant Emissions at McClellan AFB, 1990**

<b>Pollutant</b>	<b>Tons/Year</b>
Carbon Monoxide (CO)	391.47
Reactive Organic Gases (ROG)	389.79
Nitrogen Oxides (NO <sub>x</sub> )	271.19
Particulate Matter (PM <sub>10</sub> )	17.10
Sulfur Oxides (SO <sub>x</sub> )	26.52

Source: SMAQMD, 1992 (as modified to include aircraft operations and engine testing).

- Aircraft operation emissions were estimated with the Emissions and Dispersion Modeling System (EDMS) (Segal, 1988.) EDMS was developed by the U.S. Air Force and the Federal Aviation Administration to estimate airbase or airport emission inventories. Since the base emission inventory prepared by the SMAQMD did not include emissions due to aircraft, the aircraft emissions calculated with the EDMS were added to the SMAQMD emissions.
- Emissions from engine testing were also calculated and added to the SMAQMD inventory. Engine testing emissions were calculated with operational information supplied by the base and emission factors and fuel consumption data taken from the Manual Calculation Methods for Air Pollution Inventories (Fagin, 1985).

Local concentration impacts in the vicinity of the airbase were also determined with the EDMS. Emissions from aircraft and automobiles on major roadways in and around the base were input to the model in order to determine maximum local concentration impacts. The results of this modeling analysis are presented in Table 3-4 along with representative background concentrations. The results indicate that there are currently no exceedances of the NAAQS as a result of aircraft and vehicle emissions in the vicinity of the base. However, the State PM<sub>10</sub> annual (geometric mean) standard of 30 µg/m<sup>3</sup> and the State PM<sub>10</sub> 24-hour standard of 50 µg/m<sup>3</sup> are exceeded by current McClellan AFB activities in combination with existing worst-case background concentration levels.

### **3.2.2 Airspace**

**Air Traffic Control and Airspace Management.** The volume of air traffic through the Sacramento area is handled by the Sacramento Terminal Radar Approach Control (TRACON) and the Oakland Air Traffic Control Center. The Sacramento TRACON provides departure and arrival service to all the airports within the region. The region of influence considered for McClellan AFB airspace analysis covers a 20 nautical mile radius around the base, including the Sacramento Executive and Metropolitan airports. The airspace extends upward from the surface to 11,000 feet mean sea level except for the area around Davis, California, at the southwest corner of the approach control where it extends from 7,000 to 11,000 feet mean sea level. The airspace for arrivals/departures at McClellan AFB is within the control jurisdiction of the Federal Aviation Administration TRACON at Sacramento and focuses primarily on terminal maneuvering airspace. Within the region of influence, McClellan AFB has an airport radar service area that extends 5 nautical miles out and up to 5,000 feet mean sea



**Table 3-4. Air Quality Modeling Analysis for the Existing Conditions**

Pollutant	Averaging Time	Existing Impacts ( $\mu\text{g}/\text{m}^3$ )		Background Concentration <sup>(c)</sup>	Limiting Standard <sup>(d)</sup>
		Aircraft <sup>(a)</sup>	Automobiles <sup>(b)</sup>		
CO	8-Hour	318	735	6,150	10,000
	1-Hour	454	1,050	9,860	23,000 <sup>(e)</sup>
SO <sub>2</sub>	Annual	4	0.01	10.6	80
	24-Hour	14	0.04	27.8	105 <sup>(e)</sup>
	3-Hour	32	0.09	66.3	1,300
	1-Hour	35	0.10	66.3	655 <sup>(e)</sup>
PM <sub>10</sub>	Annual (Geometric)	7.23	0.07	29.8	30 <sup>(e)</sup>
	Annual (Arithmetic)	7.23	0.07	35.4	50
	24-Hour	29	0.27	96.0	50 <sup>(e)</sup>

Notes: (a) Maximum impact in all cases occurred at a receptor located near property line approximately 1,200 feet downwind from north end of the runway.

(b) Maximum impact in all cases occurred at a receptor located downwind of road leading into Peeskeeper Gate.

(c) Background concentrations assumed equal to the mean of the first-high values monitored at the North Highlands-Blackfoot monitoring station during 1990 and 1991 (refer to Table 3-2).

(d) Limiting Standard is equal to the most stringent standard (refer to Table 3-1).

(e) California standard.

level. The airspace above 13,000 feet mean sea level is controlled by the Oakland Air Traffic Control Center.

Other airports in the region are serviced by the same air traffic control system (see Figure 1-1). Aircraft operations from any one of these airports are separated from McClellan AFB by this air traffic control system. These traffic flows are linked to the military and general aviation airports that are equipped to serve both visual flight rule and instrument flight rule aircraft operations in the area. These airports are the Sacramento Metropolitan Airport, Mather AFB, McClellan AFB, Beale AFB, Sacramento Executive Airport, and Yuba County Airport.

**McClellan AFB Operations.** A variety of aircraft are involved in operations (inbound and outbound flights) and maintenance testing at McClellan AFB. Approximately 66,000 aircraft operations occurred at McClellan AFB in 1991, of which 97 percent were from 6 a.m. to 10 p.m. and 3 percent from 10 p.m. to 6 a.m. Base practice approaches (including multiple approaches, touch-and-go and low approaches) are not allowed during restricted hours (10 p.m. to 6 a.m. Monday through Saturday and 10 p.m. to 9 a.m. on Sunday).

Airfield pavement areas primarily include runways, taxiways, and aircraft parking aprons. There is one active runway which is oriented in a north-south direction. The runway is 10,600 feet long with a 1,000-foot overrun on the north and south ends and has the capacity

to accommodate the largest aircraft in the Air Force inventory. The runway has high-intensity runway lights, sequenced flashers, centerline lighting, approach lights on both ends of the runway, and visual approach slope indicator. The airfield has a Category II Instrument Landing System and a Very High Frequency Omnidirectional Range/Tactical Air Navigation system.

### **3.2.3 Biological Resources**

Biological resources include both native and introduced species of plants and animals in the project area. For the Proposed Action and alternatives, the region of influence consists of areas that are already altered or disturbed, existing buildings, parking lots, and vacant fields.

**Vegetation.** Grassland is the natural dominant vegetative community at McClellan AFB. Examples of grassland species inhabiting McClellan AFB include bromegrass, wild mustard, fiddleneck, soft chess, wild oats, and brodiaea. Riparian vegetation is found along stream courses with adequate water supplies; however, within the developed areas of McClellan AFB, much of the vegetation has been modified substantially by installation construction and by channelization of local stream courses. Limited riparian vegetation still remains along stream courses in the west area (CH2M Hill, 1992; U.S. Air Force, 1987).

Open areas adjacent to the parking aprons, base housing, and the developed areas, where most construction for the Proposed Action and alternatives would occur, are paved, used for equipment storage, or landscaped with lawns, ornamental shrubs, and trees.

Other construction areas on base include the proposed Fire Extinguisher Shop, which is a disturbed, vacant field covered with weedy vegetation and gravel. The area proposed for new housing construction consists of an 8-acre field, which contains one cottonwood tree, two olive trees, and grassland species common to the Sacramento Valley as listed above. The area proposed for construction of the Squadron Operations Facility under Alternative B consists of a field which is used for physical training activities, is regularly cut, and contains both grassland species and weedy vegetation.

No wetland vegetation communities exist within any areas proposed for construction.

**Wildlife Resources.** Wildlife populations inhabiting lands within and adjacent to McClellan AFB include those associated with the vegetative communities described above. These populations include year-round residents as well as seasonal migrants. The western fence lizard, common garter snake, and the gopher snake are a few of the more common reptilian species associated with the grassland-oriented areas in and around McClellan AFB.

Mammalian species common to the area include the western black-tailed jackrabbit, house mouse, Botta's pocket gopher, and the California vole.

Bird species on McClellan AFB include year-round residents, winter residents, and transient visitors. Raptors on the base, such as the black-shouldered kite, red-tailed hawk, American kestrel, and turkey vulture are generally transient because of the lack of suitable nesting sites. Bird species found on McClellan AFB include the ring-necked pheasant, California valley quail, western meadowlark, horned lark, domestic pigeon, starling, yellow-billed magpie, crow, gulls,

killdeer, great blue heron, mallard, teal, and coot (CH2M Hill, 1992; U.S. Air Force, 1987). During 1991, McClellan AFB reported 3 bird-aircraft strikes.

The burrowing owl, a state-designated species of special concern, is known to nest in both open and developed areas of the base; however, none were found during the archaeological surveys of proposed project areas.

**Threatened and Endangered Species.** Federally and state-listed threatened, endangered, and candidate species (Table 3-5) potentially occurring on McClellan AFB are associated with aquatic habitats only (U.S. Air Force, 1992a). No aquatic habitat exists within the areas proposed for new facility construction for the realignment of the 940th ARG (U.S. Fish and Wildlife Service, 1991).

**Table 3-5. Federal and State Listed Species Potentially Occurring on McClellan AFB**

Species	Status	
	Federal	State
Valley elderberry longhorn beetle ( <i>Desmocerus californicus dimorphus</i> )	T	-
California tiger salamander ( <i>Ambystoma tigrinum californiense</i> )	C2	-
Giant garter snake ( <i>Thamnophis couchii gigas</i> )	PE	T
Tricolored blackbird ( <i>Agelaius tricolor</i> )	C2	-
Sacramento Valley tiger beetle ( <i>Cicindela hirticollis abrupta</i> )	2R	-
Vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )	PE	-
California linderiella ( <i>Linderiella occidentalis</i> )	PE	-
Conservancy fairy shrimp ( <i>Branchinecta conservatio</i> )	PE	-
Sacramento anthicid beetle ( <i>Anthicus sacramento</i> )	C2	
Boggs Lake hedge-hyssop ( <i>Gratiola heterosepala</i> )	C2	E
Vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> )	PE	-

T = Threatened

E = Endangered

C1 = Candidate Category 1

C2 = Candidate Category 2

2R = Recommended for candidate category 2 listing

PE = Proposed Endangered

Source: U.S. Fish and Wildlife Service, 1991.

**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). No sensitive habitats exist within the proposed project areas.

#### **3.2.4 Cultural Resources**

The physiography and climate of the Central Valley of California has supported a cultural resources chronology since terminal Pleistocene times. The Valley experienced several population movements during this period, the last of which was the Nisenan, who occupied the Yuba and American rivers drainages. In the late 1820s American and European fur trappers established peaceful camps in the Nisenan territory, and gold was discovered in 1848 near the Nisenan village of Culloma (current spelling Coloma) (Smithsonian Institution, 1978; Jennings, 1978). After European contact, epidemics decimated the native population; remaining Nisenan were forced from the area during the gold rush.

Construction for McClellan AFB began in 1936, as the Sacramento Air Depot, and continued through 1941; in preparation for World War II, many additional buildings, most of temporary construction, were built between 1941 and 1943. In 1988, a portion of the original Sacramento Air Depot was designated a historic district and listed on the National Register of Historic Places (National Register).

The area of potential effect (APE) (region of influence) for cultural resources at McClellan AFB for realignment of the 940th ARG is defined as any area subject to ground disturbance or structural renovation resulting from program activities. More specifically, the APE for this Proposed Action is described as follows (see Figures 2-1, 2-2a, and 2-2b):

- An 8-acre area of ground disturbance required for the construction of 13 new housing duplexes. Construction would take place on a minimally disturbed parcel located east of Dudley Boulevard.
- An approximately 0.6-acre area of ground disturbance required for the construction of the Fuel System/Corrosion Control Dock and Hazardous Materials/Waste Storage Facility. Construction would take place partially on Apron U and partially on a heavily disturbed and graded parcel that has been used as a construction staging area.
- 0.5-acre of ground disturbance for the construction of the Fire Extinguisher Shop and Office on a moderately disturbed parcel west of Tow Lane.
- Areas beneath Apron U and other adjacent pavement areas required for the construction of the hydrant fueling system.
- An 0.2 acre area of ground disturbance for construction of the Social Actions Facility on a disturbed parcel which is currently grassed.
- An area of existing paved parking north of Howard Street required for the construction of the 936 Civil Engineering Squadron Facility.

- Renovation of 14 facilities, all of which were constructed between 1954 and 1971 (see Table 2-2).
- Demolition of 13 Wherry Housing duplexes and the subsequent construction of the Squadron Operations Facility.

The APE for the Fuel Truck Alternative is identical to that of the Proposed Action with the exception that the hydrant fueling system would not be constructed.

The APE for Alternative A is identical to that of the Proposed Action with the exception that the Squadron Operations building would be constructed between Aprons U and V on an existing paved parking area. In addition, there would be no demolition of the 13 Wherry Housing duplexes and no construction of any new housing units.

The APE for Alternative B is identical to that of the Proposed Action with the exception that the Squadron Operations building would be constructed north of Apron V on a 5-acre minimally disturbed parcel. In addition, there would be no demolition of the 13 Wherry Housing duplexes and no construction of any new housing units.

The APE for Alternative C is identical to the Proposed Action with the exception that the Squadron Operations building would be constructed south of Apron U on a 2.5 acre area which has been previously graded and is occasionally used for vehicle parking. In addition, this alternative would require the demolition of Buildings 1020 and 1040, the realignment of Price Avenue where Building 1040 currently exists, and the construction of the fuel system/corrosion control dock where Building 1020 is currently located.

Data reviewed to evaluate cultural resources within the McClellan AFB APE for all alternatives include environmental documents; documents acquired from the Office of History, SM-ALC; a literature search conducted by the North Central Information Center (North Central Information Center, 1989); and previous and recent cultural resources surveys (Diehl, 1992a; 1992b). Data indicate that no prehistoric or historic archaeological sites, Native American resources, or paleontological resources exist within the APE for ground disturbance and that none of the facilities to be renovated or demolished are older than 38 years; none are located within the Sacramento Air Depot National Register Historic District; and none demonstrate sufficient significance under any historic context to be considered eligible to the National Register.

### **3.2.5 Hazardous Materials/Waste Management**

Hazardous solid and liquid wastes are generated by McClellan AFB during routine industrial activities and aircraft maintenance operations. Generally, these wastes include: fuels and oils; plating bath solutions; degreasing solvents; paint residues; PCB liquids, solids, transformers and other electrical components; and miscellaneous laboratory chemicals.

An estimated 3.8 million pounds of hazardous waste were generated by McClellan AFB in 1990, from the following major waste streams: inorganic solid wastes; waste oil and mixed oil; unspecified organic liquid waste; organic solids with halogens; halogenated solvents; off-

specification, aged, or surplus organic materials; liquids with chromium or pH less than 2; nickel; halogenated organic compounds greater than 1,000 parts per million; and cyanide.

McClellan AFB instituted a waste minimization program in 1984 to reduce the volume, quantity and toxicity of hazardous wastes utilized by the base. Hazardous waste generation by the base has been reduced by more than 62 percent by weight since 1985, exceeding the DOD hazardous waste reduction target of 50 percent. Currently, 41 hazardous waste minimization projects have been implemented or proposed by McClellan AFB.

Management and treatment of hazardous wastes are based on waste type, toxicity, and potential for recycling or resale. Treatment or disposal of wastes includes:

- Industrial wastes treated at the on-base industrial wastewater treatment plants
- Disposal at off-base disposal sites (often at waste-specific sites)
- Containerization and transfer to DRMO for recycling or disposal
- Temporary storage of contaminated fuels for reprocessing by outside contractors
- Collection of used oils in storage tanks and transportation to the oil/water separator at Building 714 where it is collected for recycling.

Hazardous wastes that are generated on base are stored/handled in accordance with McClellan AFB's RCRA Part B hazardous waste storage permit, and applicable federal, state, and local regulations. The McClellan AFB Conforming Storage Facility is the RCRA-permitted facility utilized for storage of hazardous materials/waste. The facility has a storage capacity of 422,400 gallons (or 8,448 55-gallon drums filled to 50 gallons) and is operating at 26 percent of capacity (approximately 110,000 gallons).

The DRMO is responsible for decisions and actions regarding reuse, recycling and disposal of hazardous waste. The DRMO contracts with an outside hazardous waste hauler who, subsequent to decisions by DRMO on which wastes will be disposed, transports the waste off-site to an appropriate hazardous waste disposal facility approved by DRMO.

McClellan AFB currently has a plan to respond to hazardous materials/waste spills in accordance with the SM-ALC/McClellan AFB SPlan 19-2, Spill Prevention, Control, and Countermeasures SPlan 19-2 (U.S. Air Force, 1991). This document includes provisions for the notification of emergency response personnel (e.g., Fire Department and medical units). In addition, base tenants are required to submit their own site specific spill prevention plans through the Environmental Management Office for approval by the McClellan AFB Environmental Protection Committee.

Activities involving hazardous materials such as handling/storage of explosive and flammable materials (e.g., fuel and engine starter cartridges) are conducted in accordance with DOD Ammunition and Explosive Safety Standard 6055.9, AFR 127-100 Explosive Safety Standards, and National Fire Protection Association Standard 30.

**Asbestos Management.** Asbestos-containing material (ACM) is regulated by the U.S. EPA, Occupational Safety and Health Administration, California EPA, and the SMAQMD as the local enforcement agency. Emissions of asbestos fibers to the ambient air are controlled under Section 112 of the Clean Air Act, which established the National Emission Standards for Hazardous Air Pollutants. The National Emission Standards for Hazardous Air Pollutants regulates the demolition and renovation of buildings with ACM. EPA and the state of California have policies that manage ACM in place, if its removal or disturbance could pose a health threat. Current Air Force policy is to manage ACM in place as long as it does not pose a health threat.

Regulated ACM refers to all friable as well as non-friable asbestos that could become friable during its removal. Management of asbestos at McClellan AFB is a shared responsibility of the Environmental Management Office and the Civil Engineering Squadron. Current demolition/renovation procedures at McClellan AFB involve conducting sampling prior to any construction related activities. The samples are sent to a certified laboratory for analysis. A team of certified technicians exists on base to handle small scale asbestos removal projects, while large scale projects are carried out by contractors. A base-wide asbestos management program and asbestos operating and maintenance plan are being prepared to comply with AFR 91-42 and Air Force Logistics Command Regulation 19-3, which require the development of a base facility Asbestos Management Program. ACM is disposed in accordance with the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61 Subpart M), which includes double bagging, and is transported under applicable Department of Transportation regulations (49 CFR Parts 171 and 172) to a permitted landfill. Of the facilities to be demolished/renovated, only Building 1020 has been preliminarily sampled, and appears to be free of ACM.

**Lead-Based Paint Management.** Waste containing levels of lead exceeding 5 milligrams/liter is defined as a RCRA hazardous waste (40 CFR Part 261). The California Code of Regulations, Title 22 establishes a soluble threshold limit concentration (the level in an extract from the waste) of 5 milligrams/liter, and a total threshold limit concentration of 1,000 milligrams/kilogram. Hazardous wastes containing lead are disposed in accordance with 40 CFR Part 260 et seq, 29 CFR Part 1910.120, and California Code of Regulations, Title 22.

Paint is not regulated until it becomes waste for disposal, such as during demolition/renovation of a building. At McClellan AFB, paint samples are taken from buildings scheduled for such activity and analyzed by a certified laboratory prior to disposal. Lead-based paint may be removed either prior to, or as part of, demolition/renovation activities. In either case, waste containing lead-based paint defined as hazardous waste is removed and disposed in accordance with the applicable regulations cited above. Only Building 1020, which appears to be free of lead-based paint, has been surveyed.

**Polychlorinated Biphenyl Management.** Commercial PCBs were used in electrical equipment, primarily capacitors and transformers, because they are electrically non-conductive and stable at high temperatures. However, because PCBs persist in the environment, accumulate in organisms, and concentrate in the food chain, the manufacture and use of the compounds (except in closed systems) was banned under the Federal Toxic Substances Control Act.

Current McClellan AFB practice is to inspect areas prior to demolition/renovation, and to remove any PCBs which may be in an area to be modified. PCBs are removed and disposed

of in accordance with applicable regulations. The U.S. EPA regulates removal and disposal of equipment containing 50 parts per million or more of PCBs under the Federal Toxic Substances Control Act. Items containing 5 to 49 parts per million are regulated under California Title 22, Chapter 30. Additional state regulations are found in the California Health and Safety Code, Chapter 6.5.

**Installation Restoration Program (IRP).** Suspecting that past waste disposal practices may have contaminated groundwater in the area, McClellan AFB voluntarily created a groundwater contamination committee in 1979. Subsequent to confirmation of contamination, a comprehensive remediation program was developed to maintain drinking water quality and to remediate the contamination.

The DOD has initiated the IRP to investigate any environmental contamination present at its facilities. Thus, in 1981, McClellan AFB's remediation program was revised to conform with the IRP. Since then, numerous investigations and studies have been performed under the IRP (Radian Corporation, 1991).

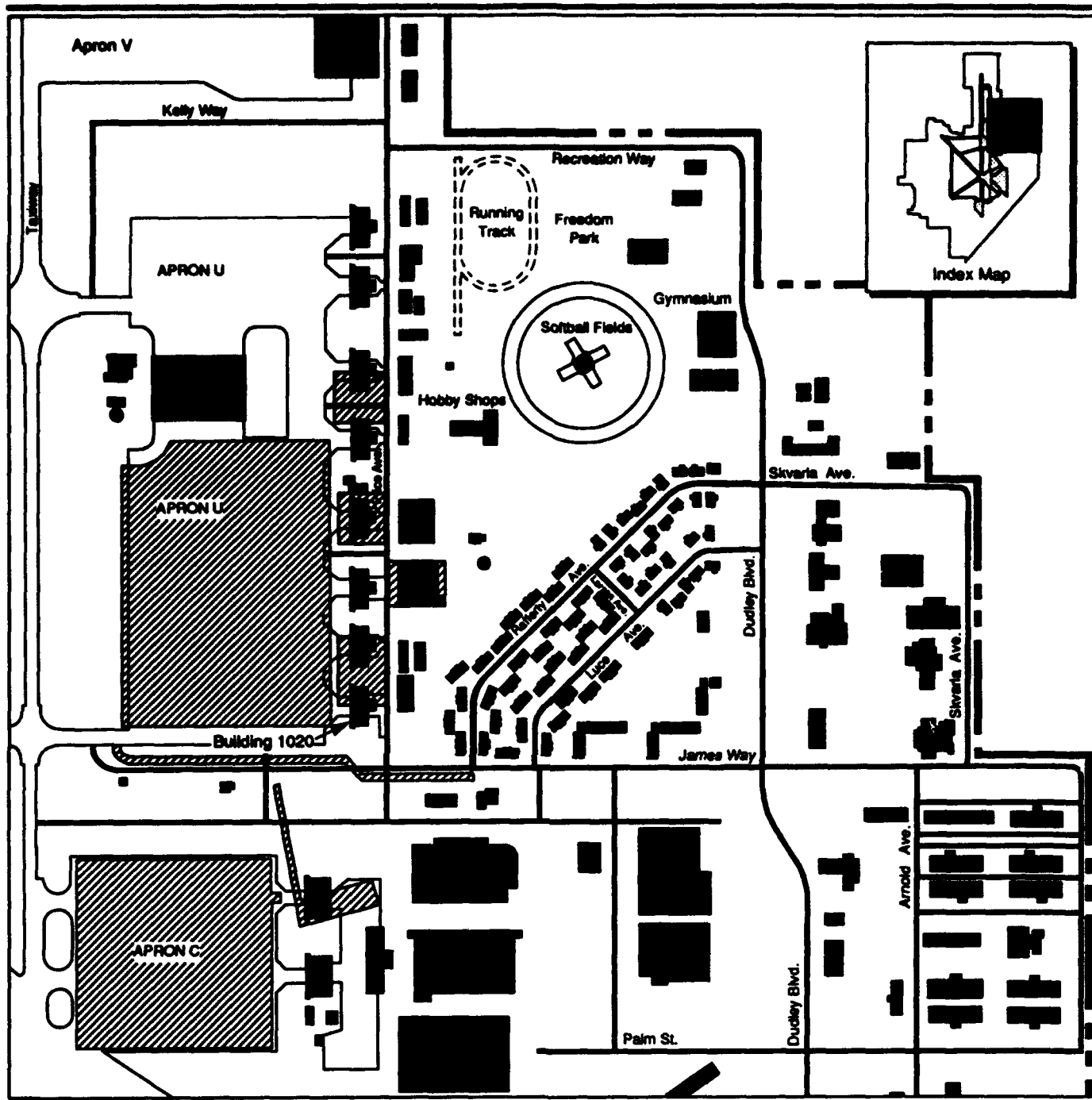
On July 22, 1987, McClellan AFB was listed on the U.S. EPA's National Priorities List. National Priorities List sites are those contaminated with hazardous materials/waste, which the U.S. EPA has designated as having the highest priority for remediation. Following this listing and subsequent negotiations, the Air Force, the U.S. EPA, and the California Department of Health Services (now part of California EPA) signed an Interagency Agreement on July 21, 1989, which established the process for involving federal and state regulatory agencies and the public in the McClellan AFB response action process. Subsequent to a comment period, a revised Interagency Agreement was signed by all parties and became effective on May 2, 1990.

The key planning document to implement the Interagency Agreement is the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Work Plan which was finalized in July 1991. The plan is updated annually as new data are obtained during ongoing IRP field investigations, as the scope of additional tasks is defined, and as new priorities are established by McClellan AFB mission requirements. The revised plan is coordinated with the participating regulatory agencies, and the public.

Based on the groundwater flow directions, areas of identified groundwater contamination, and locations of potential contaminant source areas, McClellan AFB has been divided into eight preliminary groundwater operable units. The size and boundaries of the groundwater operable units are preliminary and may be modified based on data obtained during the Remedial Investigation phase. To date, McClellan AFB has identified 258 waste sites and potential release locations that warrant investigation within the eight operable units. Five sites and potential release locations have been shown to require no further action. CERCLA-related work at McClellan AFB is currently scheduled to continue past the year 2003 (Radian Corporation, 1991).

Figure 3-1 shows the potential IRP sites near the Proposed Action and alternatives which may be affected by construction. Soil contamination in these areas is suspected to be caused by solvents from the use of underground storage tanks (currently abandoned) and from fuel spills on the aircraft parking aprons. Recent literature searches, geophysics surveys, and soil





# **EXPLANATION**

 Potential IRP Site

**Potential IRP Sites  
within Proposed  
Realignment Area**



ALC018-3



**Figure 3-1**

sampling of the potential IRP sites where construction activities would take place found no potential soil contamination except for underneath Apron U and in the drainage channel south of this apron. Apron U is where the proposed hydrant fuel lines are to be located and the proposed Fuel System/Corrosion Control Dock would be located on both the drainage channel and on the southeast side of Apron U. Laboratory results of soil sampling at Apron U identified oil- and fuel-related contamination and the drainage channel is suspected to have fuel-related contamination; however, no soil testing has been conducted at the drainage channel. The geophysics survey found no underground storage tanks and associated piping in areas proposed for building construction.

Construction on IRP sites and/or areas with potential soil contamination is conducted in accordance with occupational safety and health requirements as defined in the federal Occupational Safety and Health Administration Standards 29 CFR Parts 1910 (Hazardous Waste Operations and Emergency Response) and 1926 (Excavations), as well as the California Code of Regulations Title 8 - Industrial Relations. Air Force Occupational Safety and Health Standards (e.g., Standards 127 Series and 161 Series) are also implemented prior to and during construction activities on potentially hazardous sites. Currently, McClellan AFB samples potential release sites prior to the start of construction programs. Each contractor is required to submit a health and safety plan to the McClellan AFB Safety Office and Surgeon General, appoint a formally trained individual to act as safety officer, and is responsible for providing safety training to all workers. In addition, construction and demolition contractors on McClellan AFB must comply with the U.S. Army Corps of Engineers Safety and Health Requirements Manual (EM-385-1-1).

### **3.2.6 Infrastructure**

Due to the close proximity of McClellan AFB and Mather AFB, all infrastructure demands made by McClellan AFB and Mather AFB and met by Sacramento County departments are considered to be supplied within the same infrastructure system. The realignment of the 940th ARG from Mather AFB to McClellan AFB would result in no net change in utility demands within the region (e.g., water, wastewater, solid waste, electricity and natural gas). Therefore, the discussion below focuses on the on- and off-base infrastructure affecting McClellan AFB.

**Water.** Potable water is delivered from three on-base wells, each with a capacity of 1,000-1,200 GPM, providing the base with a total capacity of approximately 3,400 GPM (4.9 million gallons per day [MGD]). Additionally, McClellan AFB also has a commercial connection with the Northridge Water District that increases the base's capacity to over 10 MGD. This connection is utilized only when necessary during peak summer usage. In 1991, peak summer demand was approximately 2.8 MGD, while peak winter demand in 1992 was approximately 1.5 MGD. Currently, McClellan AFB has no water supply problems.

**Wastewater.** McClellan AFB has a contract with the Sacramento Regional County Sanitation District (SRCSD) to discharge co-mingled (domestic and pre-treated industrial) wastewater into the McClellan Dry Creek Interceptor, which then flows into the Sacramento Regional Wastewater Treatment Plant. The treatment plant has a design capacity of 136 MGD, with storage basins that can store an additional 200 million gallons of wastewater if capacity is exceeded.

McClellan AFB's Industrial Wastewater Treatment Plant has a capacity of 1.2 MGD. McClellan AFB produces on average approximately 0.5 MGD of industrial waste. Industrial wastewater is pre-treated prior to release into the SRCSD's McClellan connector using a variety of different processes, including oil separation, chemical treatments, and aeration. The wastewater treatment facility is tentatively planned for closure in 1993, and industrial waste would be disposed through a new oil/water separator unit and then into the Sacramento sewer system for treatment. The Sacramento system is adequate to handle McClellan AFB wastewater discharge. Domestic wastewater is discharged directly into the SRCSD connector. On average, McClellan AFB produces approximately 0.6 MGD of domestic wastewater, yielding a combined industrial and domestic wastewater flow of approximately 1.1 MGD.

**Solid Waste.** In 1991, McClellan AFB produced approximately 9,300 tons of non-hazardous solid waste, including 3,900 cubic yards of demolition debris. All non-hazardous solid waste generated at McClellan AFB is disposed at the Sacramento County (Kiefer) Landfill. Kiefer Landfill is permitted through the year 2005, but has a design capacity that extends the lifespan of the landfill to the year 2040. Permits that would extend the lifespan of the landfill to the year 2040 are pending approval from the California Integrated Waste Management Board. Asbestos and lead-based paint waste would be disposed in accordance with applicable federal, state, and local regulations as discussed in Section 3.2.5.

In addition to solid waste disposal, a resource recycling/recovery project has been initiated at McClellan AFB. This program recycles high grade paper, cardboard, rubber, metal, and other materials.

**Electricity.** Power to McClellan AFB is supplied by the Sacramento Municipal Utility District. The base has three switching stations (Haggin, ADC, and Bell), with a combined capacity of 50 megavolt-amperes. Peak summer demand is 44-45 megavolt-amperes. However, as part of planned system improvements, McClellan AFB has funded upgrades that will convert switching stations to substations, increasing the base's total capacity to 110 megavolt-amperes by June 1993.

**Natural Gas.** Natural gas is supplied to McClellan AFB by Pacific Gas and Electric. The amount of natural gas used by McClellan AFB varies between winter and summer usage. During summer 1991, average monthly demand was approximately 325,000 therms, while in winter 1992, average monthly demand was a little more than 1 million therms. Currently, there are no restrictions to the amount of natural gas Pacific Gas and Electric can supply to McClellan AFB.

**Transportation.** McClellan AFB is served by a system of seven active gates. Palm and Bell Avenue gates (Palm Street and Bell Avenue, respectively) maintain 24-hour operation, while the others are open only during peak traffic periods Monday through Friday. The gate system performs adequately; however, some minor delays are experienced at Bell Avenue Gate during morning and evening peak-hour traffic. Palm and Bell Avenue gates are currently the only gates operating on weekends. Currently, there are no traffic congestion problems on McClellan AFB.

### **3.2.7 Land Use**

**McClellan AFB Land Use.** The contiguous base property consists of 2,856 acres, including the following Air Force land use categories (Figure 3-2):

Airfield (paved and unpaved)	1,157 acres
Industrial	614 acres
Aircraft Operations and Maintenance	230 acres
Community, Commercial, and Services	70 acres
Housing (accompanied/unaccompanied)	59 acres
Administrative and Medical	51 acres
Outdoor Recreation	40 acres
Open Space	635 acres

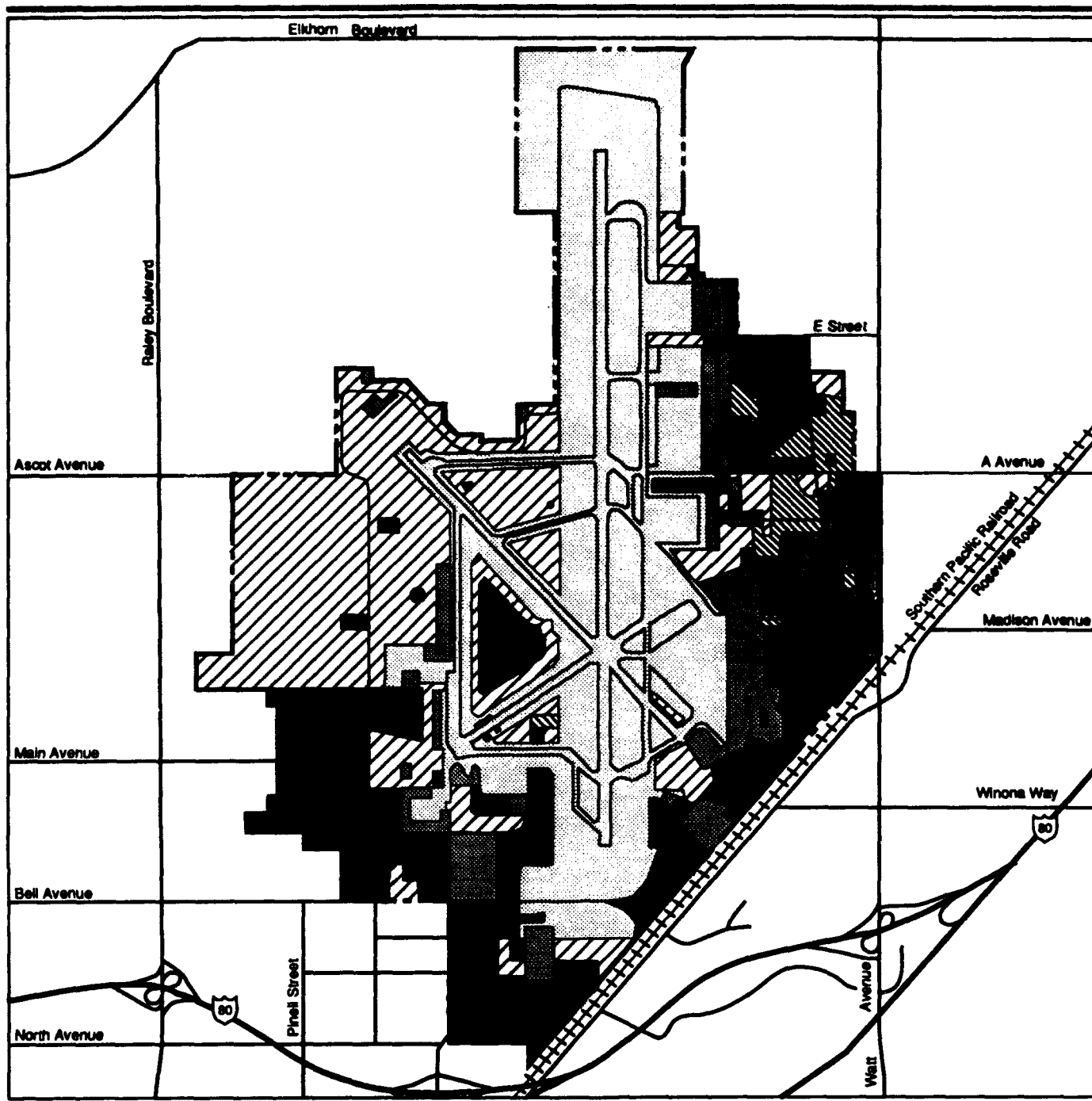
The airfield, with a 10,600-foot runway, taxiways, and apron area, divides the base into east and west sections. The west side, containing about 57 percent of the total base acreage, is dominated by open space and industrial land uses. The east side contains the administrative, commercial, residential, and outdoor recreation land uses, and concentrates a majority of the aircraft operations and maintenance, taxiway, and aircraft parking land uses immediately east and parallel to the runway (U.S. Air Force, 1987).

The sites of the Proposed Action and alternatives are primarily located in the northeast quadrant in an area designated in the Base Comprehensive Plan as District Number 3, generally defined as the area east of the runway between Kelly Way and James Way. In Alternative C, the proposed Squadron Operations Facility site is immediately south of James Way, in District Number 4. District Number 3 east of the aircraft parking apron contains aircraft Operations and Maintenance, Community Commercial, all of the on-base accompanied (Wherry) housing, and nearly all of the Outdoor Recreation land uses. A distinctive land use transition occurs in a relatively small distance in the area between the Wherry Housing and the flightline. Tank Farm 7 (industrial land use) is centrally located among Aircraft Operations and Maintenance, Community and Residential land uses, constituting a conflict in visual aesthetic harmony. The vacant site south of James Way is currently categorized as an Industrial land use (U.S. Air Force, 1987).










The vicinity is provided access via James Way, through James Gate from Watt Avenue, which parallels the eastern base boundary. On-base access to the Administrative, Community, Industrial, and Operational uses comprising the cantonment to the south is provided by Dudley Boulevard, which also connects the east and west sides by a route south of the airfield.

The current Master Plan development vision for the northeast quadrant of McClellan AFB generally consolidates and upgrades Operational, Community, Outdoor Recreation, and Residential land uses into what is called the Community Center Plan (U.S. Air Force, 1987).

Additional proposed facilities not located in District Number 3 include Building 29 (Civil Engineering Squadron addition) in District Number 10, the proposed Fire Extinguisher Shop in District Number 18 and the proposed Squadron Operations Facility under Alternative B in District Number 2. District Number 10, located in the southeast quadrant of the base, contains Medical, Administrative, and Industrial land uses. District Number 18 is in the southwest



# EXPLANATION

 Airfield	 Administrative/Medical	 Outdoor/Recreation
 Aircraft Operations and Maintenance	 Community, Commercial, and Services	 Open Space
 Industrial	 Housing	 Base Boundary

## McClellan AFB Land Use Categories



Figure 3-2

quadrant of the base and contains Aircraft Operations and Maintenance, Industrial, and Open land uses. Future land development for these two districts is for industrial uses. District 2, located in the northeast quadrant of the base, contains Open Space, Airfield Pavement, Aircraft Operations and Maintenance, Industrial, and Airfield Clearance land uses. Future land use development for this area would remain unchanged from current plans.

**Adjacent Land Use.** The base is located within an unincorporated portion of north-central Sacramento County, abutting the city of Sacramento along the southwestern base boundary. Adjacent areas east of the base are characterized by former agricultural lands developed with a variety of suburban uses (including Industrial, Commercial, and Residential). Development has been less dense directly north and to the west of the aircraft clear zone where a large-lot rural residential pattern predominates. Southwest of the base, incorporated residential neighborhoods predominate. Directly south of the runway lies a narrow commercial/industrial district, a major Interstate 80 interchange, and a golf course between the base and other suburban residential areas (Sacramento County Planning and Community Development Department, 1985).

### **3.2.8 Noise**

Noise is usually defined as a sound that is undesirable because it interferes with speech communication and hearing, it is intense enough to damage hearing, or it is otherwise annoying (unwanted sounds). Table 3-6 presents examples of typical sound levels. Major sources of noise at McClellan AFB include aircraft operations from A-10, C-12, C-21, C-130, C-135, KC-135, F-15, F-111, F-4, T-38, P-3, and various other military aircraft. These aircraft are either part of the McClellan AFB maintenance program or are stationed at the base. Other noise sources from McClellan AFB include base traffic and daily aircraft maintenance activities.

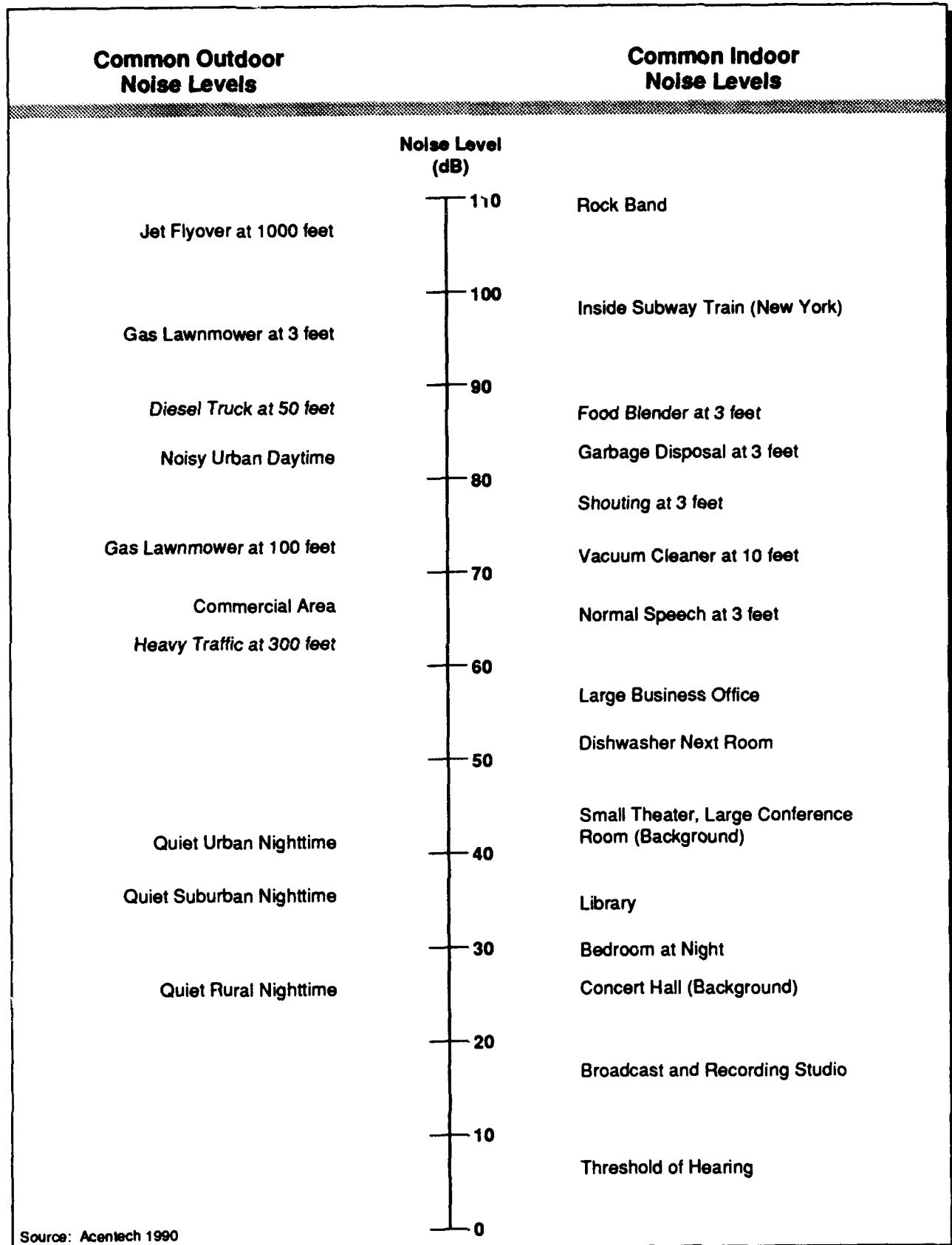
**Aircraft Operations.** McClellan AFB has one runway, R/W 16-34, which runs almost due north and south and is located in the center of the base. This runway is 10,600 feet long and 200 feet wide. Flight operations at McClellan AFB include fixed- and rotary-wing arrivals, departures, ground-controlled approach, and patterns such as touch-and-go. Both pre-flight and maintenance runups are conducted at the base. Most of the runups are for maintenance checks and include both in-frame and out-of-frame runups. Published field hours of operations are from 6 a.m. to 10 p.m. Monday through Saturday and 9 a.m. to 10 p.m. on Sundays.

Aircraft data for current McClellan AFB operations was collected by personnel from Tyndall AFB in March 1992. Aircraft operations for the base included permanent military aircraft, transient military aircraft, and nonmilitary aircraft associated with the Highway Patrol and Sheriff's Department.

The total number of aircraft operations at McClellan AFB in 1991 was reported to be 7,941 military and 7,800 nonmilitary departures/arrivals, and 40,084 military and 10,428 nonmilitary closed patterns (Tyndall AFB, 1992). For noise analysis, a closed pattern counts as two operations and involves take offs and landings or low approaches where the aircraft does not exit the traffic pattern.

**Noise Modelling Methodology.** NOISEMAP 6.1 was utilized for the preparation of the noise contours for this EA. NOISEMAP is used by DOD in determining noise exposure resulting from

**Table 3-6 Typical Sound Levels**



Source: Acentech 1990

military and civilian aircraft operations and is a Federal Aviation Administration-approved model. This program has the capability of computing basic metrics of noise exposure including Community Noise Equivalent Level (CNEL). Input data to the model included information on aircraft types; runway use; runup locations; takeoff and landing flight tracks; aircraft altitude; speeds; pattern tracks; and power settings. For this analysis the NOISEMAP Program was modelled taking into account the number of daytime (7 a.m. to 7 p.m.), evening (7 p.m. to 10 p.m.), and nighttime (10 p.m. to 7 a.m.) aircraft operations to compute the noise contours representing existing (baseline) conditions expressed in terms of the CNEL. This method uses weighting factors to place greater significance on noise events which occur during the evening and night periods. CNEL is the noise level averaged over a 24-hour period, with a 5 decibel penalty applied for evening operations and a 10 decibel penalty for nighttime operations. For example, a noise that creates a sound level of CNEL 60 during the daytime would be reported as CNEL 65 during the evening hours and CNEL 70 during the nighttime hours. The CNEL standard has been adopted by California and Sacramento County for monitoring noise around airports. Table 3-7 provides Sacramento County recommended CNEL ranges for various land use categories.

Figure 3-3 shows the NOISEMAP-generated contours for the current level of activity with the layout of the airfield and the land uses in the surrounding communities. In airport analyses, areas within levels above 65 decibels A-weighted (dBA) are often considered in land use compatibility planning and impact assessment. The county of Sacramento uses CNEL 65 for land use analysis around McClellan AFB (Sacramento County Planning and Community Development Department, 1985).

The 1983 McClellan AFB Air Installation Compatible Use Zone (AICUZ) report noise contours were not used in this EA. Instead in March 1992 the Air Force AICUZ team from Tyndall AFB accomplished updated contours for current noise levels at McClellan AFB (Figure 3-3). Noise contours were also prepared for the projected impact of the 940th ARG aircraft operations added to the baseline condition. A comparison of baseline conditions and Proposed Action impacts are discussed in Section 4.8. It is anticipated that a new AICUZ report will be released in the near future which will utilize the data collected for this noise analysis.

**Noise Sensitive Areas.** The area for McClellan AFB includes noise-sensitive receptors such as residential units, schools, hotels, hospitals, and parks which are within the CNEL 65 contour. The results of the modelling indicate that there are approximately 14,700 acres exposed to CNEL 65 or greater in the area off base. Figure 3-3 shows the land uses off base within the noise contours. Review of Sacramento County land use maps and residential density for the area within the CNEL 65 contour indicated an estimated 24,460 people reside in this area. Sensitive areas on base near Apron U, where the 940th ARG would be located, include the Wherry Housing approximately 500 feet east of this location. Current activities on Apron U include the Sheriff's Department's H-300 Helicopter, and the Highway Patrol's Bell Helicopter and Cessna 180.

**History of Noise Complaints.** The noise complaint log for air operations at McClellan AFB for the period January 1989 through December 1991 shows an average of 242 complaints received per year. Of these noise complaints, approximately 57 percent are from south of McClellan AFB, 19 percent west, 18 percent north, and 6 percent east of the base. Even



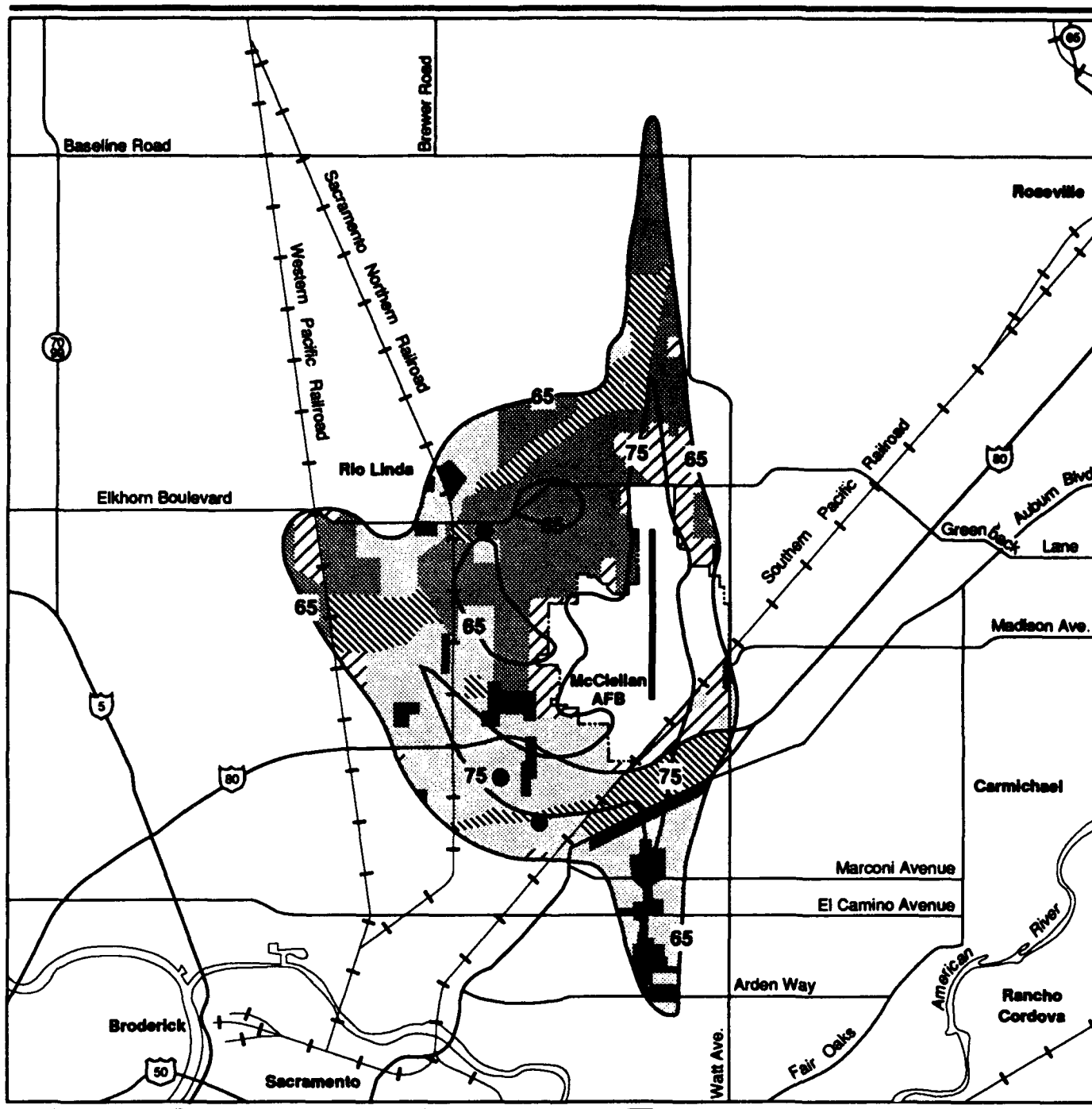
**Table 3-7**  
**Land Use Compatibility for Land Surrounding Public Use Airports**

Land Use Category	Community Noise Exposure L <sub>dn</sub> or CNEL, dB						Interpretation
	55	60	65	70	75	80	
Residential <sup>A</sup>							<div>Acceptable</div> <p>Specified land use is satisfactory. No noise mitigation measures are required.</p>
Agriculture/Residential <sup>B</sup> 5 and 10 Acres							
Transient Lodging - Motels, Hotels							<div>Conditionally Acceptable</div> <p>Use should be permitted only after careful study and inclusion of protective measures as needed for intended use and to satisfy policies of the Noise Element.</p>
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters, Sports Arena							<div>Unacceptable</div> <p>Development is not feasible in accordance with Noise Element. Use is prohibited.</p>
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing Utilities							
Open Space, Agriculture							

A. Limited to CNEL 60 dB at Metro and Franklin Airports except when Residential is associated with Agriculture, then Residential is acceptable to CNEL 65 dB (with CNEL 45 dB interior).

B. Applies to Mather and McClellan only. Agricultural-Residential is treated the same as Residential at other Airports.

Source: Sacramento County Planning and Community Development, 1991.



#### EXPLANATION



Industrial



Medical/Education



Commercial



Residential



Public Recreation



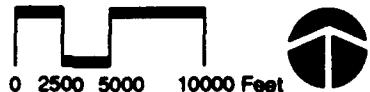
Agriculture



Other

—65— Contours of Aircraft Noise in CNEL

#### McClellan AFB Baseline Noise Contours and Off-Base Land Use



ALC/013

Figure 3-3

though most complaints are general in nature (e.g., no specific aircraft type), the aircraft which create the most noise complaints are C-5s, C-135s, and F-111s (Basset, 1992).

**Noise Abatement Procedures.** Noise abatement for McClellan AFB includes limiting flight times (quiet times) between 10 p.m. and 6 a.m. Monday through Saturday and 10 p.m. and 9 a.m. for Sunday to base assigned aircraft and essential missions terminating operations at the base. Other operations (start, taxi, and departure) are limited to operational necessity with prior approval from the Base Commander. In addition, low approaches, touch-and-go landings, and maintenance runups during the quiet periods require Base Commander approval.

Other noise abatement procedures include:

- During all ground operations, aircraft engines will be operated at minimum required power settings. Maintenance engine runs will be of shortest possible duration, using the lowest practical power settings.
- Consistent with flight manual limitations and safety of flight, visual flight rule arrivals should follow controller's instructions and maintain appropriate pattern altitude as long as practical. Instrument flight rule arrivals should use minimum practical power settings. Maneuvering/circling below pattern altitude on final approach is not authorized except in emergencies.
- As soon as possible after takeoff, terminate afterburners and/or reduce power to the lowest practical setting. Climb as rapidly as possible to 2,100 feet mean sea level.
- The use of hush houses on McClellan AFB to reduce noise generated by aircraft engine testing.

### **3.2.9 Water Resources**

**Watershed.** The watershed in the vicinity of McClellan AFB flows southwesterly. Surface water drainage on and around McClellan AFB includes Magpie, Second, Dry, and Arcade creeks (Radian Corporation, 1991). The predominant surface water features on base are Magpie Creek, Don Julio Creek, and Robla Creek. These streams essentially flow from east to west, following the general topographic slope of the area (CH2M Hill, 1992).

Most of the on-base drainage flows to Magpie Creek, which merges with several tributaries as it flows westerly across the base. The creek has been modified by channelization and flood control engineering along most of its on-base stretch. Most major runoff events occur during the winter months. The range of flows in Magpie Creek are from a mean annual minimum of 2 to 5 cubic feet per second to a mean annual maximum flow of more than several hundred cubic feet per second (CH2M Hill, 1992). Magpie Creek is located approximately 1.5 miles south of the areas proposed for use by the 940th ARG, except for the Fire Extinguisher Shop which is located 300 feet north of the creek.

**Domestic Sewage and Industrial Wastewater.** Untreated domestic wastewater is discharged directly into the SRCSD sanitation system for treatment. McClellan AFB's industrial wastewater has been, and will be until 1993, pretreated by the on-base treatment plant. From

the on-base treatment plant, the industrial wastewater flows are collected and discharged to the Dry Creek Interceptor which carries the effluent to the SRCSD plant, with ultimate discharge to the Sacramento River. McClellan AFB's combined wastewater discharge to the SRCSD's system is in compliance with the Sacramento Regional Water Quality Control Board's order to suspend the direct discharge of both domestic and industrial wastewaters to the local surface streams (CH2M Hill, 1992).

The base has one National Pollution Discharge Elimination System permit for storm water discharge which applies to on-base creeks which accept storm water discharge. Both the influent and the receiving creek's effluent are monitored to assure compliance with the permit's provisions.

**Flood Plain.** The Federal Emergency Management Agency established the original 100-year storm floodplain for Magpie Creek. The city of Sacramento subsequently expanded the limits of the 100-year floodplain beyond the original delineated boundaries. The areas proposed to be utilized by the 940th ARG are not located within the 100-year floodplain (U.S. Air Force, 1987).

**Groundwater.** Groundwater beneath McClellan AFB occurs under confined and unconfined aquifer conditions. Dense interbedded sands, silts, and clays occur from the surface to a depth of 75 feet below ground surface. Due to the lack of storage capacity, this formation yields little water. Potable groundwater first occurs at 90 feet below ground surface in most of the formation underlying McClellan AFB and the surrounding area. Groundwater recharge is largely from infiltration of water from local stream channels. Direct recharge through surface soils is limited because of the lithology of the shallow soils and the presence of hardpans. Groundwater flow beneath the base is predominantly to the south and southwest.

Hazardous substances have percolated into the aquifer underlying the facility at various locations on base. In 1979, groundwater testing by McClellan AFB, and state and local agencies identified the presence of volatile organic compounds and metals in on- and off-base wells that led to the closure of two McClellan AFB wells and three off-base wells. A special discharge permit has been assigned to the Magpie Creek discharge for the on-base groundwater treatment plant.

## **4.0 ENVIRONMENTAL CONSEQUENCES**

---

This section presents the results of the analysis of potential environmental effects of implementing the proposed realignment of the 940th ARG and the alternatives. Changes to the natural and human environments that may result from the Proposed Action and alternatives were evaluated relative to the existing environment as described in Section 3.0. For each environmental component, anticipated direct and indirect effects were assessed quantitatively and qualitatively, considering both short-term (construction related) and long term (operations related) project effects. The potential for significant environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR Part 1508.27).

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 actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The other known projects anticipated to occur on McClellan AFB that could contribute to cumulative impacts are the realignment of Detachment 42 from Norton AFB, and the realignment of the Sacramento Army Depot to McClellan AFB. Detachment 42 would involve construction and operation of a 194,000-square-foot storage facility for high value electrical components for worldwide distribution and would require approximately 200 additional personnel at McClellan AFB. The Sacramento Army Depot would consist of the transfer of maintenance workloads (e.g., electronic testing and repair) activities and would involve approximately 967 additional personnel at McClellan AFB. Potential cumulative actions are addressed in the sections below.

### **4.1 AIR QUALITY**

#### **4.1.1 Proposed Action and Alternatives**

Air quality impacts would occur during construction and operations associated with the Proposed Action and alternatives. Construction-related impacts could result from fugitive dust and combustive emissions from construction equipment. Operational impacts would occur from: (1) mobile sources such as aircraft, aircraft ground support equipment, and personal vehicles; (2) point sources such as storage tanks; and (3) secondary sources associated with general population increases, such as residential heating.

#### **Proposed Action and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Under these alternatives, 10 KC-135E aircraft would conduct approximately 85 air refueling training sorties and 340 closed patterns per month from McClellan AFB. Ground operations for the 10 KC-135E aircraft would consist of maintenance and flight preparation activities. These activities would include using the proposed hydrant fueling system for fueling and defueling. Also, as part of the realignment, new facilities would be built and some existing facilities would be modified in order to permanently support the 940th ARG mission. New facilities to be constructed would include a Fuel System/Corrosion Control Dock, a hydrant fueling system, and equipment/personnel support facilities.

**Construction Impacts.** Under the Proposed Action and alternatives, short-term emissions would occur due to construction and modification of on-base facilities. Two types of emissions would be generated by construction; fugitive dust, and combustive emissions. Most of the emissions would occur during site clearing and grading activities. The amount of fugitive dust emissions would vary depending on many factors including weather conditions, timing of construction activities, the amount of activity, and the effectiveness of emissions control measures. In general, uncontrolled fugitive dust emissions from ground disturbing activities would be 1.2 tons per acre of disturbed surface per month of activity, or 0.6 tons/acre-month of PM<sub>10</sub>.

Construction-related impacts on air quality would be adverse but short term. The amount of construction would be small (less than 10 acres of grading for any alternative), and construction impacts are generally not considered to be significant because construction is a temporary activity. Furthermore, impacts from fugitive dust could be controlled by the following methods: (1) vigorous watering of the disturbed surfaces to reduce fugitive dust by 50 percent and (2) decreasing the amount of time newly graded sites are exposed. Impacts from combustive emissions could be reduced by effectively scheduling the equipment to minimize idling time, reducing the number of pieces of equipment operating simultaneously, and establishing and following a regular vehicle maintenance program. It is not expected that any significant air quality impacts would occur during construction.

**Operation Impacts.** A new emissions inventory including the increased base support and operational activities at McClellan AFB was estimated. To estimate the new total emissions from motor vehicles, point sources, and secondary sources, the baseline emissions had to be modified to reflect emissions from only these types of sources. This was accomplished by removing engine testing and baseline aircraft emissions from the baseline inventory. This modified baseline inventory was then multiplied by the sum of the current base population plus the Proposed Action increase associated with the 940th ARG, and divided by the current base population in order to obtain the new estimate of emissions from motor vehicles, point sources, and secondary sources. Engine testing emissions associated with testing of the 940th's KC-135E aircraft were added to the new emission estimate (engine testing emissions were calculated as previously described in Section 3.2.1). Aircraft operation emissions estimated with EDMS were also added (Segal, 1988). The new emissions inventory for McClellan AFB including the Proposed Action is presented in Table 4-1.

**Table 4-1. McClellan AFB Annual Emissions Inventory including the Proposed Action**

<b>Pollutant</b>	<b>Tons/Year</b>
Carbon Monoxide (CO)	486.89
Reactive Organic Gases (ROG)	455.72
Nitrogen Oxides (NO <sub>x</sub> )	291.14
Particulate Matter (PM <sub>10</sub> )	20.85
Sulfur Oxides (SO <sub>x</sub> )	26.63

The potential impacts to air quality as a result of air emissions from the Proposed Action 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 the SVAB. The local-scale analysis evaluated the potential impact to the ambient air quality concentrations in the immediate vicinity of the base.

**Regional Scale.** Since the 940th ARG is moving from Mather AFB to McClellan AFB and not changing their mission or number of aircraft or personnel, there would be no net increase in air emissions from moving to the new base. Mather AFB, which is located 7 miles east-southeast from McClellan AFB, is also in the SVAB. Therefore, no net increase in the emissions in the air basin would occur, and the project would not cause or contribute in any new way to a nonattainment condition in the SVAB.

Upon transfer of aircraft operations to McClellan AFB, the 940th ARG would use the proposed hydrant fueling system to transfer approximately 5.4 million gallons per year of JP-8 fuel, instead of JP-4 currently used at Mather AFB. The composition of JP-8 differs from that of JP-4. JP-8 contains greater quantities of kerosene and fewer aromatic hydrocarbons (less ROG emissions) than JP-4. JP-8 has a vapor pressure that is approximately 150 times less than that of JP-4 (SMAQMD uses a ratio of 1.3:0.0085 to convert JP-4 emissions to equivalent JP-8 emissions). The switch of fuel would therefore reduce ROG emissions associated with the 940th ARG by 16,646 pounds per year. With JP-8 the total ROG emissions would be 110 pounds per year compared to the 16,756 pounds per year currently associated with 940th ARG JP-4 use at Mather AFB. The pressurized Type III system would be capable of delivering 1,200 GPM and would consist of a new 10,000-barrel and existing 10,000-barrel aboveground fuel tanks. Storage vessels and fueling operations are typically sources of volatile organic compound emissions. Pressure systems are considered to be closed systems with virtually no emissions. Some fugitive losses are possible with pressure systems and related equipment, but with proper maintenance and use of JP-8 fuel with its low ROG emissions, these losses would be significantly less than if JP-4 fuel were used.

If a 940th ARG aircraft does arrive at McClellan AFB with JP-4 fuel from another base, the fuel would remain on the aircraft unless specific maintenance requires defueling. The process of defueling the aircraft and using the fuel in the existing McClellan AFB Jet Engine Test Cell (see Section 2.1.3.2) has been permitted by the SMAQMD.

The 940th ARG operational and support activities would meet requirements of all the McClellan AFB Environmental Quality Protection Plans, as well as all state and local requirements of the SMAQMD or U.S. EPA. Prior to construction and operations, a permit to construct and a permit to operate would have to be obtained by McClellan AFB from the SMAQMD. This permitting process may require a Best Available Control Technology analysis and will take into account any required emissions credits at McClellan AFB. No air emission credits or permits are required for mobile sources such as aircraft, aerospace ground equipment, and vehicles.

**Local Scale.** Impacts from aircraft operations and automobile traffic emissions associated with the Proposed Action and alternatives were modeled with EMDS. These results are presented in Table 4-2. When these maximum impact concentrations are added to the background values, the total impacts are less than the applicable federal standard. The aircraft operations of the Proposed Action add only  $0.77 \mu\text{g}/\text{m}^3$  to the  $\text{PM}_{10}$  annual (geometric mean) levels. This

**Table 4-2. Air Quality Modeling Analysis for McClellan AFB including the Proposed Action**

Pollutant	Averaging Time	Baseline and Project Impacts ( $\mu\text{g}/\text{m}^3$ )			Limiting Standard <sup>(d)</sup>
		Aircraft <sup>(a)</sup>	Automobiles <sup>(b)</sup>	Background Concentration <sup>(c)</sup>	
CO	8-Hour	373	777	6,150	10,000
	1-Hour	533	1,110	9,860	23,000 <sup>(e)</sup>
SO <sub>2</sub>	Annual	4	0.01	10.6	80
	24-Hour	16	0.04	27.8	105 <sup>(e)</sup>
	3-Hour	35	0.10	66.3	1,300
	1-Hour	39	0.11	66.3	655 <sup>(e)</sup>
PM <sub>10</sub>	Annual (Geometric)	8	0.07	29.8	30 <sup>(e)</sup>
	Annual (Arithmetic)	8	0.07	35.4	50
	24-Hour	31	0.29	96.0	50 <sup>(e)</sup>

- Notes: (a) Maximum impact in all cases occurred at a receptor located near property line approximately 1,200 feet downwind from North end of the runway.  
 (b) Maximum impact in all cases occurred at a receptor located downwind of road leading into Peacekeeper Gate.  
 (c) Background concentrations assumed equal to the mean of the first-high values monitored at the North Highlands-Blackfoot monitoring station during 1990 and 1991 (refer to Table 3-2).  
 (d) Limiting Standard is equal to the most stringent standard (refer to Table 3-1).  
 (e) California standard

slight increase is a very small addition (2.1 percent) to the existing McClellan AFB PM<sub>10</sub> emissions and background concentrations that already exceed the State annual PM<sub>10</sub> standard. Likewise, the Proposed Action adds only 2.02  $\mu\text{g}/\text{m}^3$  (1.6 percent) to the existing emissions and background concentrations that already exceed the State 24-hour PM<sub>10</sub> standard. Local scale impacts associated with the Proposed Action and alternatives are not significant.

The CAA of 1990 requirements for oxygenated fuels in CO nonattainment areas will reduce CO emissions from automobiles by approximately 15 percent (SMAQMD, 1991). This reduction coupled with transportation control measures proposed by the SMAQMD would allow the Sacramento County portion of the SVAB to reach attainment by December 31, 1994. The small incremental impact from the increase in automobile and aircraft traffic associated with the Proposed Action and alternatives (a maximum increase of 97  $\mu\text{g}/\text{m}^3$  over baseline conditions shown in Table 3-4) would not prevent or delay the timely attainment of the CO NAAQS and CAAQS nor exacerbate the existing regional CO exceedances.

**Conformity Determination.** According to the CAA Amendments of 1990, a federal agency must make a determination that a federal action would conform to the applicable State Implementation Plan (SIP) before the action is taken. The conformity responsibilities mean that the federal action must conform to the SIP's goals of eliminating or reducing the severity and number of NAAQS violations and achieving expeditious attainment of the standards. The federally-supported activity must not: (1) cause or contribute to new NAAQS violations, (2) increase the frequency or severity of existing NAAQS violations, or (3) delay timely attainment



of standards or required interim milestones (CAA Section 176(c)(1)(B)). Currently, the U.S. EPA is developing a Federal Implementation Plan (FIP) for the Sacramento County area. The current California SIP for the area requires revision to comply with CAA requirements. The U.S. EPA is expected to promulgate the FIP in early 1993, and the FIP will govern air quality control measures until an adequate SIP for the Sacramento County area is submitted by the State and approved by the U.S. EPA. Under the proposed realignment, aircraft emissions and related operation emissions would increase at McClellan AFB. However, because the emissions would be transferred from Mather AFB which is located 7 miles away and there would be a reduction in total ROG emissions associated with the switch of fuel from JP-4 to JP-8, there would be a net decrease in the emissions within the air basin and SMAQMD. Therefore, the proposed realignment would not change the attainment status within the SVAB and SMAQMD. Local air quality impacts in the vicinity of McClellan AFB would not violate the NAAQS and would not prevent or delay the timely attainment of any federal standard. The Proposed Action would therefore conform to the applicable air quality implementation plan.

#### **Fuel Truck Alternative**

This alternative would be the same as the Proposed Action except tanker trucks would be used to fuel the aircraft instead of the hydrant fueling system. Although the number of fuel transferring operations would be greater under this alternative than the Proposed Action, no increase in fuel storage/transferring related emissions would be expected because of the low volatility of JP-8. The ROG emissions associated with JP-8 using fuel trucks (112 pounds per year) would reduce the ROG emissions by 16,644 pounds per year compared to JP-4 emissions associated with the 940th ARG hydrant fueling system at Mather AFB (16,756 pounds per year). It is estimated that the annual emissions from diesel fuel trucks would be 0.40 tons of CO, 0.14 tons of hydrocarbons, 1.40 tons of NO<sub>x</sub>, 0.14 tons of PM<sub>10</sub> and 0.13 tons of sulfur oxides. These emissions, when added to the total base emissions, would produce an insignificant increase in emissions.

#### **No-Action Alternative**

Under the No-Action Alternative there would be no change in air emissions at McClellan AFB or in the SVAB; therefore, no significant impacts would occur.

#### **4.1.2 Mitigation Measures**

No mitigation measures would be required for the Proposed Action or alternatives, including the No-Action Alternative.

#### **4.1.3 Cumulative Impacts**

#### **Proposed Action and Squadron Operations/Group Headquarters Alternatives A, B, and C**

The realignment of the 940th ARG, along with the Sacramento Army Depot program and the Detachment 42 realignment, could create potential cumulative air quality impacts. However, because the Sacramento Army Depot realignment to McClellan AFB, and the proposed realignment of the 940th ARG are already within the SVAB, no net increase in emissions would occur within the basin from these activities; therefore, no significant cumulative impacts would occur to air quality in the Sacramento area from the proposed realignment.

### **Fuel Truck Alternative**

Although there would be the potential for increases in fuel-related emissions (see above) from this alternative, cumulative impacts would be similar to the Proposed Action; therefore, no significant cumulative impacts would occur.

### **No-Action Alternative**

Under the No-Action Alternative, continuation of 940th ARG operations at Mather AFB along with Detachment 42 and Sacramento Army Depot activities at McClellan AFB would have similar effects to the Sacramento region's air quality as the Proposed Action.

## **4.2 AIRSPACE**

### **4.2.1 Proposed Action and Alternatives**

#### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Because the 940th ARG would use the same airspace system at McClellan AFB that they currently use at Mather AFB, there would be no increase in workload to the existing Sacramento control system; therefore, the realignment would not have a significant impact to the region's airspace.

### **No-Action Alternative**

If the realignment is not implemented, the current flight operations at McClellan AFB and in the Sacramento region would remain unchanged.

### **4.2.2 Mitigation Measures**

No mitigation measures would be required for implementation of the Proposed Action or alternatives, including the No-Action Alternative.

### **4.2.3 Cumulative Impacts**

#### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Because the realignment of the 940th ARG would not increase use of the Sacramento region airspace, and other planned programs would only increase flight operations in the area by 0.3 percent, no significant cumulative impacts to airspace would occur.

### **No-Action Alternative**

Cumulative impacts to the Sacramento region's airspace from continued operations of the 940th ARG at Mather AFB would be similar to the Proposed Action.

## **4.3 BIOLOGICAL RESOURCES**

### **4.3.1 Proposed Action and Alternatives**

#### **Proposed Action and Fuel Truck Alternative**

Implementation of the proposed realignment would involve modification of existing buildings and construction of new facilities. Construction-related activities would take place on a concrete apron, in areas previously disturbed by past grading activities, or in undisturbed areas.

**Vegetation.** Loss of vegetation associated with the proposed realignment would be minimal. Proposed construction would occur in paved areas, landscaped areas with lawns, and areas which consist of weedy vegetation (0.5 acres for the Fire Extinguisher Shop) except where the new housing is proposed. The vegetation in the 8-acre field where the housing would be constructed consists of a cottonwood tree, two olive trees, and common grassland species (see Section 3.2.3). The vegetation loss would not represent any unique vegetation/wildlife habitat and would only represent approximately 1 percent of the open area on McClellan AFB; therefore, no significant impacts to vegetation would occur.

**Wildlife Resources.** Construction of the housing units and Fire Extinguisher Shop could result in the loss of resident mice, ground squirrels, reptilian species, and displacement of a few individual members of other mobile species such as the western black-tailed jackrabbit and burrowing owl. In addition, the loss of habitat would reduce the foraging area available to some of the transient raptor species at McClellan AFB, such as the red-tailed hawk. Other construction would take place in areas of low biological value such as paved areas or locations disturbed by current activities (e.g., mowing and storing of equipment).

Activities and noise associated with the demolition and construction of facilities would have a short-term effect on larger or highly mobile species since those intolerant of such disturbances could avoid the vicinity of the project. KC-135E operations would continue noise and visual effects currently associated with flight operations at McClellan AFB. Additional aircraft traffic from the Proposed Action would increase the potential for bird-aircraft collisions; however, McClellan AFB reported only 3 bird-aircraft strikes in 1991. Therefore, impacts on populations of wildlife species from increased flight activities would not be significant. Overall, no significant impacts would occur to wildlife species from the proposed realignment.

**Threatened and Endangered Species.** Federally and state-listed species on McClellan AFB are associated with aquatic habitats. No aquatic habitats exist within the areas where new construction is proposed; therefore, no significant impacts would occur to threatened and endangered species.

**Sensitive Habitats.** There are no sensitive habitats within the areas proposed for construction.

#### **Squadron Operations/Group Headquarters Alternative A**

Under this alternative the Squadron Operations Facility would be constructed in a paved area. Impacts to biological resources would be similar to the Proposed Action except there would be no construction of new housing in the undisturbed 8-acre field.

#### **Squadron Operations/Group Headquarters Alternative B**

This alternative is the same as the Proposed Action except the Squadron Operations Facility would be constructed in a 5-acre open field and there would be no construction of new housing in the undisturbed 8-acre field. The area proposed for the Squadron Operations Facility under this alternative is an area used for physical training activities and consists of both weedy and common grassland species which is routinely cut. The loss of vegetation would not represent the loss of any unique vegetation/wildlife habitat and would only represent approximately 1 percent of the open area on McClellan AFB; therefore, no significant impacts to vegetation would occur.

Impacts to other biological resources would be similar to those discussed for the Proposed Action.

#### **Squadron Operations/Group Headquarters Alternative C**

This alternative is the same as the Proposed Action except the Squadron Operations Facility would be constructed in a 2.5-acre area which has been graded and is occasionally used for vehicle parking and there would be no construction of new housing. In addition, this alternative includes construction/demolition in mowed grass areas next to Buildings 1020 and 1040. Because these areas lack vegetation except for mowed grass and other ornamental shrubs, impacts to vegetation/wildlife habitat would not be significant.

Impacts to other biological resources would be similar to those discussed for the Proposed Action.

#### **No-Action Alternative**

Under the No-Action Alternative, no construction or increased aircraft operations would take place at McClellan AFB; therefore, no significant impacts would occur.

#### **4.3.2 Mitigation Measures**

No mitigation measures would be required for implementation of the Proposed Action or alternatives, including the No-Action Alternative.

#### **4.3.3 Cumulative Impacts**

#### **Proposed Action and Fuel Truck Alternative**

The only other planned programs (see Section 4.0) are the realignments of Detachment 42 and the Sacramento Army Depot. These programs would involve the loss of approximately 1.5 acres of grassland habitat which has been previously disturbed by past grading activities. This area combined with the Proposed Action would not significantly decrease (approximately 2 percent) the amount of available habitat at McClellan AFB. In addition, there is no unique vegetation or wildlife habitat in the area proposed for construction.

#### **Squadron Operations/Group Headquarters Alternatives A and C**

Under these alternatives, construction would take place on areas which are paved, used to store equipment, or consist of mowed grass, except for less than one acre (Fire Extinguisher Shop). This, combined with the 1.5 acres for the realignment of Detachment 42 and the Sacramento Army Depot, would not significantly decrease the amount of available habitat on McClellan AFB. In addition, there is no unique vegetation or wildlife habitat in the area proposed for construction.

#### **Squadron Operations/Group Headquarters Alternative B**

Under this alternative construction would take place on areas which are paved or disturbed except for approximately 6 acres. This, combined with the 1.5 acres for the other planned programs, would not significantly decrease the amount of available habitat on McClellan AFB. In addition, there is no unique vegetation or wildlife habitat associated with these areas.

#### **No-Action Alternative**

No cumulative impacts have been identified from the No-Action Alternative.

### **4.4 CULTURAL RESOURCES**

#### **4.4.1 Proposed Action and Alternatives**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Construction for the proposed realignment would take place on either a concrete apron, existing paved areas, or areas that have been found to be devoid of prehistoric and historic archaeological sites, Native American resources, and paleontological resources and/or cleared through consultation with the California State Historic Preservation Officer. None of the buildings requiring demolition or renovation are older than 38 years; none are located within the Sacramento Air Depot National Register Historic District; and none demonstrate sufficient significance under any historic context to be considered eligible to the National Register. For these reasons, no adverse effects would occur to cultural resources from implementation of the Proposed Action or any of the alternatives. During the early stages of program planning, consultation with the California State Historic Preservation Officer was initiated and concurrence with an Air Force determination of no effect to historic properties was received on several aspects of the Proposed Action and alternatives (Appendix A). Subsequent to that concurrence, changes to the Proposed Action and alternatives were made resulting in further consultation with the State Historic Preservation Officer and an additional Air Force determination of no effect.

#### **No-Action Alternative**

Under the No-Action Alternative, realignment of the 940th ARG would not occur and current military operations at McClellan AFB would remain unchanged; therefore, there would be no effects to cultural resources.

#### **4.4.2 Mitigation Measures**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Numerous archaeological surveys of McClellan AFB have been conducted, none of which have identified any prehistoric or historic archaeological sites, Native American resources, or paleontological resources. The nearest site reported was over one mile from the base along Arcade Creek and that site has never been verified. However, because the Central Valley has demonstrated a long cultural history, the slight potential to uncover cultural material during ground disturbing activities does exist. In the event that any such resources are unexpectedly encountered during the course of this undertaking, construction should cease in the immediate area and a qualified archaeologist consulted. Subsequent actions would comply with 36 CFR Part 800.11 and the Native American Graves Protection and Repatriation Act.

##### **No-Action Alternative**

No mitigation measures would be required for the No-Action Alternative.

#### **4.4.3 Cumulative Impacts**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Because no prehistoric or historic archaeological sites, Native American resources, paleontological resources, or buildings eligible to the National Register exist within the McClellan AFB APE for the Proposed Action or any of the alternatives, no cumulative impacts would occur.

##### **No-Action Alternative**

No cumulative impacts would occur from the No-Action Alternative.

### **4.5 HAZARDOUS MATERIALS/WASTE MANAGEMENT**

#### **4.5.1 Proposed Action and Alternatives**

##### **Proposed Action**

Hazardous waste generated by the 940th ARG at Mather AFB is managed in accordance with applicable federal, state, and local regulations. The types and volumes of hazardous materials used and hazardous wastes generated by the 940th ARG would not be expected to change upon realignment to McClellan AFB.

**Hazardous Materials/Waste Management.** As shown in Table 2-1, the total amount of hazardous waste generated by the 940th ARG in fiscal year 1991 was 17,141 pounds, and is not expected to change upon realignment to McClellan AFB. This waste represents less than 1 percent of the approximately 3.8 million pounds of waste generated by McClellan AFB in

1990. Waste generated by the 940th ARG would be temporarily stored less than 90 days in the to-be-constructed, 500-square-foot Hazardous Materials/Waste Storage facility prior to transfer to the McClellan AFB Conforming Storage Facility. Transfer of 940th ARG waste to this facility, which is currently operating at 26 percent of capacity, would have no significant impact on storage. In addition, the 940th ARG would adhere to the McClellan AFB waste minimization program. Thus, there would be no significant impacts to hazardous waste management or hazardous waste storage capacity at McClellan AFB upon realignment.

The Proposed Action includes construction of a Fuel System/Corrosion Control Dock where, among other activities, aircraft washing would occur. Wastewater from aircraft washdown would be pre-treated in a newly constructed oil/water separator prior to being released into the McClellan AFB's industrial waste line. The 940th ARG currently uses a biodegradable solvent for aircraft cleaning operations. However, because this cleaner emulsifies oils, its use would not be compatible with the operation of an oil/water separator. The emulsified oil may contain heavy metals and other hazardous materials, which would then be carried into the industrial waste treatment system. The 940th ARG would coordinate with McClellan AFB personnel to find an acceptable alternative solvent that would limit these conditions.

The above procedure for treating aircraft wash water is currently utilized by the 940th ARG at Mather AFB. There would be no impact from transferring these operations to McClellan AFB because the oil/water separator would be constructed in accordance with all applicable regulations, and would be regularly maintained, inspected, and cleaned. McClellan AFB representatives have stipulated that no untreated hazardous materials/waste be disposed into industrial waste lines. This includes activities scheduled to occur in interim facilities. If the 940th ARG plans on using hazardous materials in washing the aircraft or if heavy metals are identified in wash water after treatment by the oil/water separator, additional pretreatment of the wash water would be required prior to release into the industrial waste line. This treatment may include use of a filtration device attached to the oil/water separator. Any hazardous waste generated from the use of this system would be handled in accordance with RCRA.

During proposed operations there is some potential for hazardous materials/waste spills from either jet fuel or other materials used during aircraft operations. However, all spills would be handled in accordance with SM-ALC/McClellan AFB SPlan 19-2 (U.S. Air Force, 1991), which addresses the procedures for effective management to contain and dispose of hazardous spills. In addition, the McClellan AFB Environmental Protection Committee would require the 940th ARG to provide a spill prevention plan for its activities, for approval. Hazardous waste/materials management by the 940th ARG at McClellan AFB would be in accordance with current McClellan AFB hazardous waste/materials programs such as worker training programs, and waste management requirements.

Hydrant fuel system operation and starter cartridge storage could pose potential hazardous materials impacts to base personnel. To avoid these health related impacts, DOD Ammunition and Explosive Safety Standard 6055.9, AFR 127-100, Explosive Safety Standards, and National Fire Protection Association Standard 30 would be implemented during all phases of construction and operation of the hydrant fueling system and starter cartridge facilities.

**Construction/Demolition/Renovation Waste.** During construction activities, small quantities of hazardous waste would be generated and the potential for hazardous waste spills would exist.

However, hazardous waste generated during construction, including any potential hydraulic and oil spills from construction equipment, would be the responsibility of the construction contractor, and would be contained, collected and turned into the base for disposal in accordance with federal, state, and local regulations. If a hazardous waste spill should occur, work would stop and the contractor would notify the base Fire Department.

To avoid potential exposure of construction personnel to hazardous materials, and to avoid potential release of hazardous materials, the buildings would be surveyed prior to demolition/renovation activities for the presence of ACM, PCBs, and lead-based paint. If these materials are present and would be disturbed during activities, they would be removed and disposed by McClellan AFB personnel or a certified contractor in accordance with applicable federal, state, and local regulations (see Section 3.2.5).

Because the amounts of hazardous waste generated by the 940th ARG can be managed by McClellan AFB and hazardous waste generated during construction would be disposed according to applicable regulations, no significant impacts to hazardous materials/waste management would occur.

**Installation Restoration Program.** Soil samples were collected at potential IRP sites where construction would take place except for the drainage channel south of Apron U. No soil contamination was found in the samples except for those collected from under Apron U, where fuel contamination from past aircraft activities exist. The drainage channel south of this area is considered a potential IRP site and McClellan AFB would conduct soil sampling prior to construction to identify any contamination. The construction of new facilities would not be delayed by or cause impacts to IRP work except for the hydrant fueling system underground fuel lines proposed for Apron U and the Fuel System/Corrosion Control Dock. However, during construction in these areas, Environmental Management would manage any contaminated area in conjunction with the construction. Impacts with construction would be minimized in contaminated areas. In addition, all proposed IRP work in contaminated areas would be conducted in accordance with the base's Interagency Agreement.

During construction of the hydrant fueling system and Fuel System/Corrosion Control Dock, there is the potential for construction workers to come in contact with contaminated soils and/or small quantities of organic vapors. During any type of intrusive operations, there is the potential for release of soil gases when the soil is disturbed. To avoid health and safety impacts to workers, the construction contractor would be required to write an accident prevention plan (Health and Safety Plan) prior to each phase of the construction project according to applicable regulations discussed in Section 3.2.5. This plan would include the protection of construction workers from hazardous soils and would be reviewed by the McClellan AFB Safety Office and Surgeon General.

#### **Fuel Truck Alternative**

The Fuel Truck Alternative would be the same as the Proposed Action except the hydrant fueling system would not be constructed for use by the 940th ARG. This alternative would require the use of fuel trucks to fuel and defuel the KC-135E aircraft. The fueling of an average aircraft load would require three fuel truck loads, and a maximum fuel load would require seven fuel truck loads. Defueling of the aircraft (if required for maintenance) would also



use the fuel trucks. Fuel for this alternative would come from existing Fuel Tank Farms 7 and 10.

All applicable fuel handling and spill response procedures outlined above for the Proposed Action would also be applicable for this alternative; therefore, no significant impacts would occur from this alternative.

Under this alternative, there would be no construction of the hydrant fueling system, and therefore, no potential health or IRP impacts associated with construction of this system. All other construction activities would be the same as the Proposed Action.

#### **Squadron Operations/Group Headquarters Alternatives A and B**

Impacts from these alternatives would be the same as the Proposed Action except the amount of potential hazardous construction debris would be less because there would be no demolition of the 13 Wherry Housing duplexes.

#### **Squadron Operations/Group Headquarters Alternative C**

Impacts from this alternative would be the same as Alternatives A and B except for the potential of additional hazardous construction debris from demolition of Buildings 1020 and 1040. In addition, under this alternative the Fuel System/Corrosion Control Dock would not be constructed on a potential IRP site; however, construction of the Squadron Operations building may come into contact with the drainage channel south of Apron U, which is a potential IRP site. Potential impacts would be handled as described under the Proposed Action.

#### **No-Action Alternative**

Under the No-Action Alternative, no additional hazardous materials/waste from construction and operation of the 940th ARG would be generated at McClellan AFB; therefore, no significant impacts would occur.

#### **4.5.2 Mitigation Measures**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Because some aircraft solvent may not be compatible with oil/water separators, the 940th ARG would coordinate with McClellan AFB personnel to find an acceptable alternative solvent which would be compatible with oil/water separators.

#### **No-Action Alternative**

No mitigation measures would be required for the No-Action Alternative.

#### **4.5.3 Cumulative Impacts**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Potential cumulative impacts (e.g., spills, inadequate storage space) could occur to the hazardous materials/waste management program from the increased activities from the Detachment 42 realignment, and the realignment of the Sacramento Army Depot. However, given the excess storage capacity for hazardous waste on McClellan AFB and that all applicable regulations would be followed during the storage, handling, and disposal of hazardous materials/waste, no significant cumulative impacts would occur.

##### **No-Action Alternative**

Under this alternative the 940th ARG would continue to generate similar amounts of hazardous waste at Mather AFB as discussed for the proposed realignment to McClellan AFB. No change to amounts of hazardous waste generated in the Sacramento region would occur, because the Sacramento Army Depot is currently in this area and Detachment 42 would not generate any hazardous waste stream (warehouse function).

### **4.6 INFRASTRUCTURE**

#### **4.6.1 Proposed Action and Alternatives**

##### **Proposed Action**

The realignment of the 940th ARG to McClellan AFB would involve a 2 percent increase in personnel and additional operational needs at McClellan AFB. Thus, the demand for additional infrastructure for personnel and operational activities (e.g., potable water, natural gas, electrical power, sewage treatment, solid waste disposal, and transportation) would also increase slightly. However, this increase in demand is well within the excess capacity for the base's infrastructure, and no significant impacts would occur. The addition of 250 full-time personnel represents less than a 1-percent increase in total base traffic, and would not cause any significant traffic delays.

Additionally, a maximum of 900 persons would be present for reserve training two weekends a month. However, this is a weekend activity and most other base activities would not be operating; therefore, no significant impacts are expected to occur.

Due to the demolition of the 13 Wherry Housing units, the Proposed Action could generate a one-time increase of 11 percent over the total amount of non-hazardous solid waste generated at McClellan AFB in 1991. Resource recycling/recovery could reduce the total amount of solid waste disposed into the Sacramento County landfill, which has adequate capacity to handle the additional construction debris.

### **Fuel Truck Alternative**

Although this alternative would generate slightly more traffic on base than the Proposed Action, this additional traffic would be extremely localized due to the close proximity of the aboveground storage tank to the parking apron and, therefore, would not affect base traffic. Impacts to the rest of McClellan AFB's infrastructure are the same as those described in the Proposed Action.

### **Squadron Operations/Group Headquarters Alternatives A and B**

Impacts from these alternatives would be the same as the Proposed Action except the amount of solid waste generated would be less because there would be no demolition of the 13 Wherry Housing duplexes.

### **Squadron Operations/Group Headquarters Alternative C**

Impacts from this alternative would be the same as the Proposed Action except the amount of solid waste generated would be less because there would be no demolition of the 13 Wherry Housing duplexes. However, this alternative would require the demolition of Buildings 1020 and 1040, and the removal of a portion of Price Avenue. The local Sacramento County landfill has adequate capacity to handle the additional construction debris.

### **No-Action Alternative**

Under the No-Action Alternative there would be no realignment; therefore, no impacts to infrastructure would occur.

### **4.6.2 Mitigation Measures**

No mitigation measures would be required for implementation of the Proposed Action or alternatives, including the No-Action Alternative.

### **4.6.3 Cumulative Impacts**

#### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Cumulative impacts to infrastructure could occur from two other programs planned at McClellan AFB during the same time period as the realignment of the 940th ARG. Realignment of Detachment 42 from Norton AFB to McClellan AFB, and the potential realignment of the Sacramento Army Depot to McClellan AFB could involve the addition of more than 1,167 personnel to McClellan AFB. This could increase base population to approximately 13,667. Historically, McClellan AFB has operated with a base population exceeding 16,000. In 1991, the base population was approximately 16,400 and McClellan AFB experienced no infrastructure constraints; therefore, no cumulative impacts are expected to occur.

## **No-Action Alternative**

No additional infrastructure demand would occur at McClellan AFB; therefore, no cumulative impacts would occur.

## **4.7 LAND USE**

### **4.7.1 Proposed Action and Alternatives**

#### **Proposed Action and Fuel Truck Alternative**

On-base land use conflicts are not expected under the Proposed Action and Fuel Truck Alternative. Most land uses associated with these alternatives would be compatible with the general character of established base land use patterns. The close location of the Proposed Squadron Operations Facility to Wherry Housing is typical of military installations, which collocate diverse land uses according to maximum mission usefulness. Transition zones would be planned to modify the impacts of stark land use conflicts. Effective transition of different, closely located land uses would be achieved through thoughtful site design, incorporating solutions to building activity orientation, buffering, and screening, given the constraints of site and program. Overall, the land use concept and location of facilities is in accordance with the general character of established base land use patterns.

Construction activities of the facilities proposed may have a temporary minor constraint on existing operations and land uses; however, after construction, these facilities are not expected to impact any adjacent land use. The Proposed Action and Fuel Truck Alternative site development includes the demolition of 13 units of the existing housing and construction of similar new units (see Figure 2-2a). This option would have an added beneficial effect of increasing the distance from new accompanied housing to the flightline and other operational (incompatible) facilities.

The proposed relocation of family housing occurs in an area on the edge of the base, but this development is expected to affect off-base land use only during the construction period. The adjacent off-base land use appears to be incompatible with residential development but adequate buffering and orientation of the future residential units would alleviate any negative impacts from these off-base uses.

Since there would be no significant increase to the noise contours (4 percent increase in CNEL 65 and above contour) generated by the 940th ARG flight operations, no significant land use incompatibility would exist and Air Force policies regarding adjacent land use would remain unchanged.

#### **Squadron Operations/Group Headquarters Alternative A**

This alternative would be the same as the Proposed Action except the Squadron Operations Facility would be located between Aprons U and V. The land use between the aprons is designated Industrial land use. The placement of an administrative facility in an industrial land use would collocate diverse land use, but would be in accordance with the general character of established base land use patterns.

### **Squadron Operations/Group Headquarters Alternative B**

This alternative would be the same as the Proposed Action except the Squadron Operations Facility would be located north of Apron V in an area designated as Open Space land use. This land use designation is compatible with an administrative facility.

### **Squadron Operations/Group Headquarters Alternative C**

This alternative would be the same as the Proposed Action for land use except the Squadron Operations Facility would be located south of Apron U in an area designated as Industrial land use. The placement of an administrative facility in an industrial land use would collocate diverse land use, but would be in accordance with the general character of established base land use patterns.

### **No-Action Alternative**

Under the No-Action Alternative the realignment would not occur; therefore, no impacts to land use would occur.

#### **4.7.2 Mitigation Measures**

No mitigation measures would be required for implementation of the Proposed Action or alternatives, including the No-Action Alternative.

#### **4.7.3 Cumulative Impacts**

**Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

No cumulative land use impacts would result from the Proposed Action in combination with other construction, alterations, and realignments. An increase in flight operations of 0.3 percent from other planned programs would produce a negligible increase to the off-base residential land use exposed to the CNEL 65 and above contour.

### **No-Action Alternative**

No cumulative impacts would occur from the No-Action Alternative.

## **4.8 NOISE**

### **4.8.1 Proposed Action and Alternatives**

#### **Proposed Action**

The NOISEMAP methodology was used to compute CNEL contours for the proposed realignment. The CNEL contours were generated by adding the 940th ARG's KC-135E operations into the baseline condition described in Section 3.2.8. The 940th ARG would account for an approximately 6 percent increase in arrivals/departures at McClellan AFB and

an 8 percent increase in closed patterns. For this analysis the CNEL 65 contour was used for impact assessment as recommended by Sacramento County guidelines. Figure 4-1 presents the noise contours for the proposed realignment along with land use in the area around McClellan AFB. A comparison of the baseline noise contours with the Proposed Action contours (Figure 4-2) shows small differences, which are further defined in terms of acreage and residents affected (Table 4-3). The most noticeable change in the CNEL 65 contour is north of Runway 16-34; a second area is located west of the base. Otherwise, the contours are virtually identical. Under the Proposed Action 1 percent more of the off-base residents would be exposed to the CNEL 65 contour or above than under the baseline condition due to minor increases in noise levels. Approximately 61 percent of the increase (acreage) in the noise contour would occur on agricultural land.

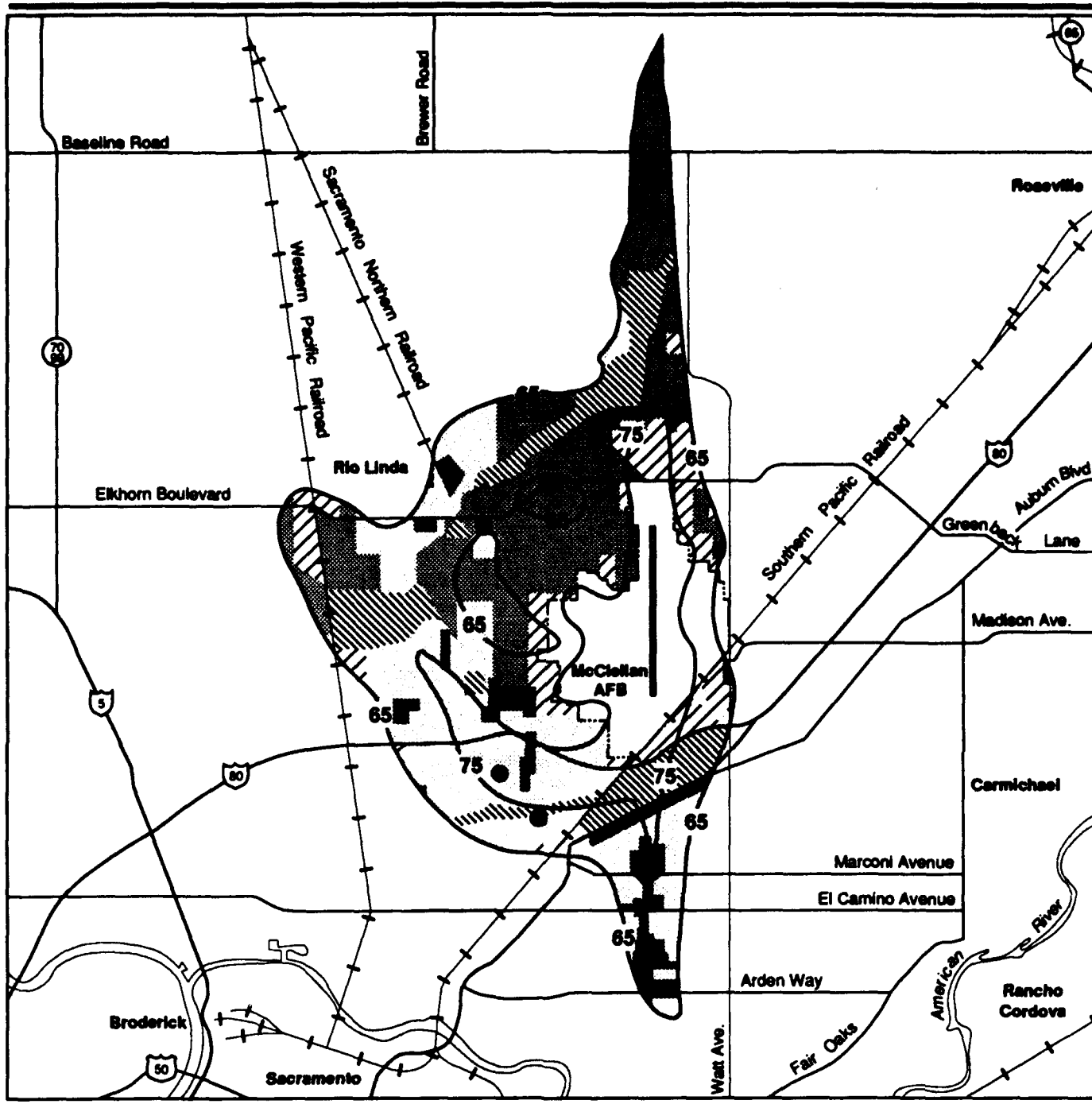
**Table 4-3. Noise Exposure Greater than CNEL 65 for the Proposed Action Off-Base**

	Area within Noise Contour (acres)	Approximate Population Exposed
Baseline	14,700	24,460
Proposed Action	15,300	24,800
Net Change	600	340

As discussed in Section 3.2.8, McClellan AFB has established noise abatement procedures to reduce noise annoyance to nearby off-base residents. Even though operations for the 940th ARG would increase flights, none would conflict with the noise abatement procedures and aircraft operations would use the same departure and arrival tracks as current aircraft at McClellan AFB.

Daily and weekend operations of the 940th ARG would increase noise in the vicinity of the flightline. This would occur from engine run-ups/warm-ups, aircraft maintenance activities, and from use of the hydrant fueling system pump house. Because of the close proximity to the on-base Wherry Housing units (approximately 500 feet east of the flightline), aircraft engine noise and maintenance could cause an initial annoyance to the occupants; however, those noise sources are typical of Air Force installations. In order to reduce some of the aircraft jet engine maintenance noise the 940th ARG is planning to use existing hush houses at McClellan AFB to conduct jet engine testing.

The hydrant fueling system pump, which would be located approximately 300 feet west of the Wherry Housing, could increase noise levels during operation. However, measurements taken for a similar hydrant fueling system at Castle AFB, California, indicated peak noise levels at this distance would be between 54-60 dBA. This noise level is below current background levels experienced on McClellan AFB as shown on Figure 4-1. Under the Proposed Action new housing units would be located further away from the aircraft flightline than existing units (approximately 0.5 miles). Therefore, this relocation would be beneficial in reducing noise effects to some on-base residents. However, because of the high noise levels experienced on McClellan AFB, all new housing structures will incorporate appropriate sound attenuation materials into the design.



# EXPLANATION



Industrial



Medical/Education



Commercial



Residential



Public Recreation



Agriculture



Other

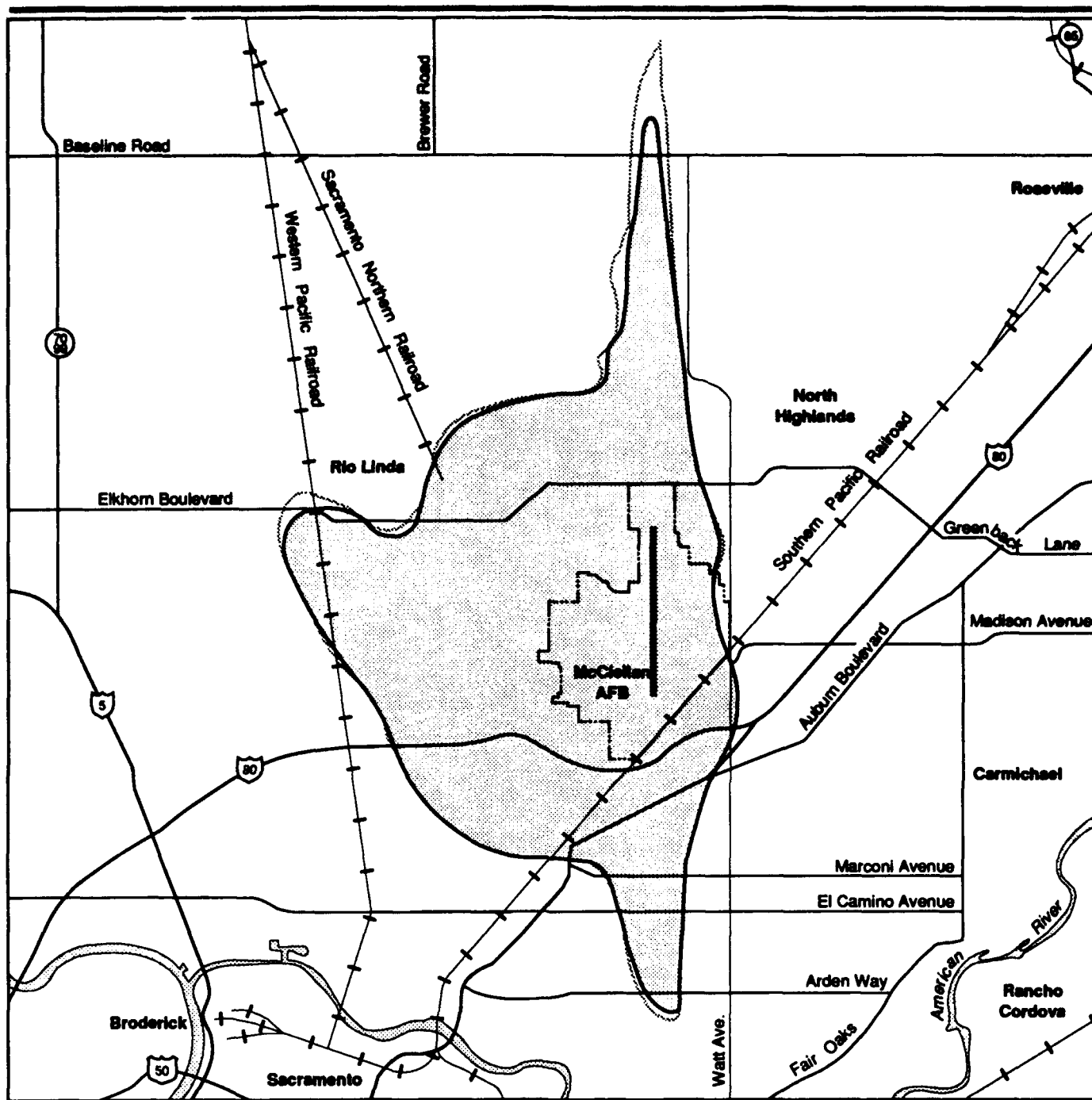
—65— Contours of Aircraft Noise in CNEL

## McClellan AFB Baseline Noise Contours Plus 940th ARG Operations



0 2500 5000 10000 Feet



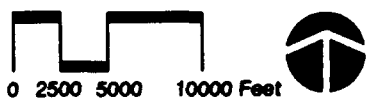
Figure 4-1



#### EXPLANATION

-  Area of Baseline 65 CNEL Contour
-  Area of Proposed Action 65 CNEL Contour

#### Comparison of Proposed Action and Baseline Noise Contours



ALC/028

Figure 4-2



Construction of the Squadron Operations Facility would be in an area where noise levels are above day-night level 65 decibels. Noise levels in this area would be incompatible with the operation of an administrative facility. Proper sound attenuation would be used to reduce levels inside the facility by approximately 25 decibels.

Noise generated from construction activities (e.g., building demolition, construction, and renovation) would generate noise levels that could potentially affect workers and McClellan AFB personnel. Noise levels generated by heavy equipment used during these activities would be in the range of 70 dBA to just over 90 dBA at 50 feet from the source. However, the levels would be intermittent, and only occur during the daytime work hours; therefore, significant impacts to base personnel and construction workers would not occur.

#### **Fuel Truck Alternative**

Impacts from this alternative would be the same as the Proposed Action, except for the noise generated from the use of fuel trucks to service the KC-135E aircraft instead of the hydrant fueling system. Fueling of the tanker trucks would be conducted at Fuel Tank Farms 7 and 10. Because Fuel Tank Farm 7 is located next to the Wherry Housing units, there would be an increase in noise levels from trucks to these on-base housing units. However, because truck use would be intermittent and of short duration, impacts would not be significant.

#### **Squadron Operations/Group Headquarters Alternatives A, B, and C**

Impacts from these alternatives would be the same as the Proposed Action except there would be no construction of new housing further from the flightline; therefore, there would be no beneficial impact to some on-base residents by relocating new housing units further from aircraft operations and noise.

#### **No-Action Alternative**

Under the No-Action Alternative there would be no increase in noise related to flight operations or construction activities at McClellan AFB from the 940th ARG; therefore, no significant impacts would occur.

### **4.8.2 Mitigation Measures**

#### **Proposed Action and Fuel Truck Alternative**

Appropriate sound attenuation would be incorporated into the building design of the Squadron Operations Facility and new family housing to reduce noise levels by approximately 25 decibels.

#### **Squadron Operations/Group Headquarters Alternatives A, B, and C**

Appropriate sound attenuation would be incorporated into the building design of the Squadron Operations Facility to reduce noise levels by approximately 25 decibels.

#### **No-Action Alternative**

No mitigations would be required for this alternative.

#### **4.8.3 Cumulative Impacts**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Cumulative impacts from noise could occur from the addition of 192 aircraft operations for the realignment of Detachment 42 from Norton AFB, and 2 for Sacramento Army Depot activities. The addition of these programs would increase operations at McClellan by approximately 0.3 percent. This increase would not significantly change the noise contours generated for the Proposed Action; therefore, no cumulative impacts would occur.

#### **No-Action Alternative**

Because there would be no realignment, no cumulative impacts would occur from the 940th ARG.

### **4.9 WATER RESOURCES**

#### **4.9.1 Proposed Action and Alternatives**

##### **Proposed Action, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

The activities associated with construction and renovation of facilities for the proposed aircraft realignment could temporarily increase surface soil erosion into the drainage system at McClellan AFB. Thus, some temporary minor degradation, primarily from the introduction of sediments, could occur to surface waters at the base. In addition, runoff from construction areas would have the potential to contaminate surface water and soils with motor oil, hydraulic fluid, and other products associated with construction machinery. To avoid potential impacts to water resources during construction, erosion controls such as silt fences, hay bales, or other such means as determined by the designer would be implemented. Major hydraulic or oil spills which may occur during construction would be cleaned up as hazardous waste (see Section 4.5), and other minor runoff which may occur would be short-term, pending the completion of construction activities and the stabilization of the disturbed open areas.

Other possible contamination to water resources during aircraft operations could come from aircraft washdown, the aqueous fire fighting foam suppression system, and hazardous spills potentially being released into the water drainage system. However, industrial waste water from the aircraft washdown would be diverted into an oil/water separator unit, where potential contaminants (primarily petroleum hydrocarbons), would be removed and contained as hazardous waste and disposed. The remaining water from the separator would be disposed through the base industrial waste line. The aqueous fire fighting foam suppression system would be installed in the Fuel System/Corrosion Control Dock and would only be used in the unlikely event of a fire. However, if used, the material would be contained and disposed in accordance with the McClellan AFB Spill Plan, thus preventing the material from entering the

water system. Any hazardous materials spills from aircraft operations would be contained and containerized to preclude their contact with the water drainage system (see Section 4.5 for procedures).

Because of the above standard erosion control measures, and since hazardous waste spills and materials from construction, operations, and aircraft washdown would be remediated, containerized, and disposed in accordance with the McClellan AFB Hazardous Waste Management Plan, June 1, 1992 (U.S. Air Force, 1992c), and the SPlan 19-2 (U.S. Air Force, 1991), impacts to water resources would not be significant.

Initial operations of the 940th ARG at McClellan AFB would be closely monitored by appropriate McClellan AFB personnel. These inspections are intended to assure that all chemical storage, handling and disposal practices would not release chemicals into the environment. Regular National Pollutant Discharge Elimination System monitoring would continue, and this would be a back-up check for any potential chemical releases into the base drainage system.

McClellan AFB has entered into an agreement with the State of California which requires suspending all industrial waste discharges into the industrial wastewater treatment plant by July 1993. Thus, McClellan AFB would require the 940th ARG to discharge no industrial waste into the industrial wastewater treatment plant. Industrial waste lines on McClellan AFB would connect to the Sacramento Sewer System, after going through the base oil/water separator.

None of the proposed interim or permanent facilities planned to be used by the 940th ARG are located in the 100-year floodplain. No new facility would be constructed, located or developed in the 100-year floodplain zone. Thus, activities of the 940th ARG would not pose a threat to the downstream environment or wildlife resources.

The Proposed Action would not adversely affect local groundwater supplies since discharges (both industrial and domestic) would be to the Sacramento sewer system and not to groundwater recharge areas. The Proposed Action is not expected to contribute to the contamination of groundwater which is being treated at the groundwater treatment plant; therefore, no significant impacts to groundwater would occur.

#### **Fuel Truck Alternative**

Although there is the potential for increased fuel spills from the extra fuel handling inherent in this alternative, all applicable fuel handling and spill response procedures outlined above for the Proposed Action would also be used for this alternative. There should be no additional impact to surface or groundwater resources for this alternative; therefore, no significant impacts would occur.

#### **No-Action Alternative**

If the 940th ARG does not realign to McClellan AFB, there would be no additional impact to McClellan AFB's water resources.

#### **4.9.2 Mitigation Measures**

No mitigation measures would be required for the Proposed Action or alternatives, including the No-Action Alternative.

#### **4.9.3 Cumulative Impacts**

##### **Proposed Action, Fuel Truck Alternative, and Squadron Operations/Group Headquarters Alternatives A, B, and C**

Potential cumulative impacts could occur to water resources from the other construction programs planned at McClellan AFB, such as the proposed realignment of Detachment 42. However, potential hazardous materials/waste would be prevented from entry into local drainage systems, and applicable regulations would be followed; therefore, no significant cumulative impacts to water resources would be expected.

##### **No-Action Alternative**

No cumulative impacts would occur from the No-Action Alternative.

#### **4.10 COMPATIBILITY OF THE PROPOSED ACTION WITH THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS AND POLICIES**

The Proposed Action and alternatives are not expected to significantly change the current noise environment or affect land use policies or plans in the area around McClellan AFB. These areas are specifically managed for uses that are consistent with the industrial/airport designation assigned to McClellan AFB, or the already established land uses are considered to be legal non-conforming uses. The activities associated with the Proposed Action and alternatives are consistent with McClellan AFB mission objectives and operations.

The land uses associated with the Squadron Operations/Group Headquarters Alternatives A, B, and C would be in accordance with existing and proposed land uses on McClellan AFB. The Proposed Action and Fuel Truck Alternative, which would locate the Squadron Operations building in Wherry Housing, is typical of military installations, which collocate diverse land uses according to maximum mission usefulness.

#### **4.11 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS**

The implementation of the Proposed Action, Fuel Truck Alternative, or Squadron Operations/Group Headquarters Alternatives A, B and C would not generate any significant adverse effects provided suitable mitigation listed in this document are incorporated into the program.

The No-Action Alternative would not generate any unavoidable adverse environmental effects.

#### **4.12 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY**

The Proposed Action and the alternatives would not adversely affect the long-term productivity of any resources found in the local environment. Under the Proposed Action and alternatives there would be construction in undisturbed areas of McClellan AFB; however, there are no sensitive habitats or threatened and endangered species, cultural resources, or unique physical resources in these areas. Therefore, the Proposed Action and alternatives do not eliminate any options for future use of the environment on McClellan AFB.

#### **4.13 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES**

The Proposed Action or alternatives would not result in a significant loss of grassland species and native habitat for plants and animals, and no loss or impacts to threatened or endangered species and cultural resources. Moreover, there would be no development of underground mineral resources. The amount of material required for any program-related activities and energy use during the project would be small. The realignment would result in irreversible and irretrievable commitment of small quantities of resources, such as metallic and nonmetallic material, fuel, and labor.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **5.0 GLOSSARY**

---

<b>Air Quality Control Region:</b>	An area designated by Section 107 of the Clean Air Act which is based on jurisdictional boundaries, urban-industrial concentrations, and other factors including atmospheric areas, that is necessary to provide adequate implementation of air quality standards.
<b>Air Traffic Control:</b>	A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.
<b>Ambient Air Quality:</b>	Standards established on a state or federal level that define the limits for airborne concentrations of designated criteria pollutants 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).
<b>Archaeology:</b>	A scientific approach to the study of human ecology, cultural history, and cultural process, emphasizing systematic interpretation of material remains.
<b>Asbestos:</b>	A group of minerals characterized by long, thin, flexible crystals, formerly used widely as a fireproofing and insulation material by the construction industry; often found in older buildings. Asbestos is a known carcinogenic substance.
<b>Asbestos-containing material:</b>	As defined by the U.S. EPA, any material that contains more than 1 percent asbestos.
<b>Attainment Area:</b>	An air quality control region that has been designated by the U.S. EPA and/or the appropriate state air quality agency as having ambient air quality levels better than or equal to the standards set by the NAAQS.
<b>Best Available Control Technology:</b>	The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising the stationary source.
<b>Candidate Species:</b>	Species for which listing as threatened or endangered is possible, but for which more biological data are needed before a final determination is made.
<b>Capacity (Utilities):</b>	The maximum load a system is capable of carrying under existing services conditions.

<b>Category II Instrument Landing System:</b>	An instrument landing system approach which provides for approach height above touchdown of not less than 100 feet and with runway visual range of not less than 1,200 feet.
<b>Clear Zone:</b>	An area used to enhance the safety of aircraft operations. It is at ground level beyond the runway end.
<b>Closed Pattern:</b>	Successive operations involving takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern.
<b>Cultural Resources:</b>	Objects, structures, buildings, sites, districts, or other physical remains used by humans in the past. Such resources may be historic, architectural, or archival in nature.
<b>Cumulative Impacts:</b>	The combined impacts resulting from all activities occurring concurrently at a given location.
<b>Day-Night Level:</b>	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 because of noise during night hours.
<b>Decibel:</b>	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.
<b>Decibel A-weighted:</b>	A frequency dependent weighting to a sound measurement to approximate the sensitivity of normal human hearing.
<b>Endangered Species:</b>	2A species that is threatened with extinction throughout all or a significant portion of its range.
<b>Environmental Assessment:</b>	A concise public document in which a federal agency provides sufficient analysis and evidence for determining the need for an EIS or FONSI. EAs provide agencies with useful data regarding compliance with NEPA and are an aid in the preparation of an EIS.
<b>Environmental Impact Statement:</b>	A detailed analysis of environmental aspects of a proposed project that is anticipated to have a significant effect on the human and natural environment.
<b>Environmental Protection Agency:</b>	The independent federal agency, established in 1970, that regulates environmental matters and oversees the implementation of environmental laws.



<b>Explosive Safety Quantity-Distance:</b>	The quantity of explosive material and distance separation relationships providing defined types of protection. These relationships are based on levels of risk considered acceptable for the stipulated exposures.
<b>Groundwater:</b>	Water within the earth that supplies wells and springs.
<b>Hazardous Material:</b>	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 or potential risk to human health or the environment. Use of these materials is regulated by the Department of Transportation, Occupational Safety and Health Administration, and U.S. Environmental Protection Agency.
<b>Hazardous Waste:</b>	RCRA defines hazardous waste as any discarded material that may pose a substantial threat or potential danger to human health or the environment when improperly handled. Some of the characteristics of these wastes are toxicity, ignitability, corrosivity, and reactivity.
<b>Hydrocarbons:</b>	Any of numerous organic compounds, such as benzene and methane, that contain only carbon and hydrogen.
<b>Impact:</b>	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 by a qualitative and nominally subjective techniques.
<b>Infrastructure:</b>	The utility and transportation networks needed for the functioning of an installation.
<b>Mitigation:</b>	A method or action to reduce or eliminate adverse environmental impacts.
<b>National Ambient Air Quality Standards:</b>	EPA-promulgated allowable ambient air concentrations to protect public health and welfare by defining the limits of airborne concentrations of designated "criteria" pollutants. Standards cover ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulates, and lead.
<b>National Pollutant Discharge Elimination System:</b>	Regulates discharges into the nation's waters with a federal permit program designed to reduce the amount of pollutants in each discharge.

**National Register of  
Historic Places:**

The nation's master inventory of known historic properties worthy of preservation. The National Register of Historic Places is administered by the National Park Service on behalf of the Secretary of the Interior. National Register listings include buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance. Properties listed are not limited to those of national significance; most are significant primarily at the state or local level.

**National Register -  
Eligible Property:**

A property that has been determined eligible for National Register listing by the Secretary of the Interior, or one that has not yet gone through the formal eligibility determination process but which meets the National Register criteria. For Section 106 purposes, an eligible property is treated as if it were already listed.

**Nonattainment Area:**

An air quality control region that has been designated by the EPA and/or the appropriate state air quality agency as having ambient air quality levels above the primary standards.

**Ozone:**

A major ingredient of smog. Ozone is produced from reactions of hydrocarbons and nitrogen oxides in the presence of sunlight and heat.

**Resource  
Conservation and  
Recovery Act:**

Established in 1976 to protect human health and the environment from improper waste management practices.

**Runup:**

Maintenance testing of aircraft engines at various power settings and durations.

**Sensitive Species:**

Species listed by state and/or federal agencies that is not listed as threatened or endangered but is of concern because of habitat or other reasons.

**Solvent:**

A substance that dissolves or can dissolve another substance.

**Sortie:**

An individual flight; it includes a departure, an approach, and possibly one or more closed patterns.

**Species of Special  
Concern:**

A California State species approaching endangerment for which more information and studies are required.

**Threatened Species:**

Species likely to become endangered in the foreseeable future.

**Total Force Policy:**

A DOD policy which recognizes all components contributing to the deterrence of war and the protection of national security interests.

**Touch-and-Go:**

**An operation by an aircraft that lands and departs on a runway without stopping or exiting the runway.**

**Terminal Radar  
Approach Control:**

**A terminal air traffic control facility that uses radar and nonradar capabilities to provide approach control services to aircraft arriving , departing, or transiting airspace controlled by the facility.**

**Very High Frequency  
Omnidirectional  
Range/Tactical Air  
Navigation:**

**A navigation aid providing very high frequency omnidirectional range azimuth, tactical air navigation azimuth, and distance measuring equipment at one site.**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **6.0 CONSULTATION AND COORDINATION**

---

The federal, state, and local agencies, and private agencies/organizations contacted during the course of preparing this EA are listed below:

### **FEDERAL AGENCIES**

Environmental Protection Agency, Region IX

U.S. Air Force Reserve, Mather AFB

U.S. Air Force, Brooks AFB

U.S. Air Force, McClellan AFB

U.S. Air Force, Norton AFB

U.S. Air Force Reserve, Robins AFB

U.S. Air Force, Tyndall AFB

### **STATE AGENCIES**

California Department of Fish and Game

California Department of Health Services

Department of Parks and Recreation, Office of Historic Preservation

### **LOCAL AGENCIES**

Sacramento Metropolitan Air Quality Management District

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **7.0 LIST OF PREPARERS AND CONTRIBUTORS**

---

**Gary P. Baumgartel, Lieutenant Colonel, U.S. Air Force, Director, AFCEE/ESE**  
B.A., 1972, Science Degree in Civil Engineering, Lowell Technical Institute, Massachusetts  
M.S., 1979, Facilities Management, Air Force Institute of Technology, School of Systems  
and Logistics, Wright-Patterson AFB, Ohio  
Years of Experience: 20

**Sandra Lee Cuttino, P.E., Environmental Manager, The Earth Technology Corporation**  
B.S., 1979, Civil Engineering, University of California, Davis  
Years of Experience: 12

**Eugenia Diehl, Staff Archaeologist, The Earth Technology Corporation**  
B.S., 1989, Anthropology, University of California, Riverside  
Years of Experience: 7

**Marion S. Erwin, Environmental Engineer, U.S. Air Force, AFCEE/ESER**  
B.A., 1972, Biology, Cornell College, Iowa  
M.S., 1975, Environmental Engineering, University of Illinois, Urbana  
B.S., 1981, Civil Engineering, Southern Illinois University, Edwardsville  
Years of Experience: 9

**David Essex, Staff Environmental Specialist, The Earth Technology Corporation**  
B.S., 1991, Environmental Science, University of California, Riverside  
Years of Experience: 3

**Peter L. Grill, Senior Staff Environmental Specialist, The Earth Technology Corporation**  
Environmental Studies, California State University, San Bernardino  
Years of Experience: 4

**Jane Hildreth, Senior Project Environmental Specialist, The Earth Technology Corporation**  
B.S., 1983, Biology and Environmental Science, University of California, Riverside  
M.S., 1989, Biology, California State University, San Bernardino  
Years of Experience: 6

**Brian Hovander, P.E., Environmental Engineering, U.S. Air Force, SM-ALC/EMRP**  
B.S., 1970, Civil Engineering, Oregon State University, Corvallis  
Years of Experience: 21

**Vincent Izzo, Senior Project Environmental Specialist, The Earth Technology Corporation**  
B.A., 1985, Geography, California State University, Northridge  
Years of Experience: 6

**George Maier, Managing Senior Environmental Scientist, The Earth Technology Corporation**  
B.S., 1973, Chemistry, Old Dominion University, Virginia  
Graduate Studies, Old Dominion University, Virginia  
Years of Experience: 22

**Douglas McDonald, Project Environmental Specialist, The Earth Technology Corporation**  
B.L.A., 1986, Landscape Architecture and Environmental Planning, Utah State University  
Years of Experience: 5

**Paige Peyton, Senior Project Environmental Specialist, The Earth Technology Corporation**  
B.A., 1987, Anthropology, California State University, San Bernardino  
M.A., 1990, Anthropology/Geography, California State University, San Bernardino  
Years of Experience: 7

**Robert Poll, Health and Safety Manager, The Earth Technology Corporation**  
B.S., 1985, Nuclear Engineering, Rensselaer Polytechnic Institute, New York  
Years of Experience: 5

**Christian Rogers, Senior Environmental Professional, The Earth Technology Corporation**  
B.A., 1969, English, St. Edwards University, Texas  
M.A., 1979, Public Administration, Pepperdine University, California  
Years of Experience: 22

**Sam Roethermel, CGWA, CPG, REA, Senior Hydrologist, The Earth Technology Corporation**  
B.S., 1980, Geology, Ohio University  
M.S., 1984, Geology, University of Arkansas  
Years of Experience: 12

**Sam C. Rupe, Major, U.S. Air Force, Attorney, AFCEE/JA**  
B.S., 1977, History, U.S. Air Force Academy, Colorado  
J.D., 1984, University of Miami, Florida  
LLM, 1991, George Washington University, Washington, DC  
Years of Experience: 7

**David T. Savinsky, Chemical Engineer, Science Applications International Corporation**  
B.S., 1987, Chemical Engineering, University of California, Los Angeles  
Years of Experience: 4

**Stephen E. Ziemer, Senior Air Quality Specialist, Science Applications International Corporation**  
B.S., 1976, Environmental Engineering, Southern Illinois University, Carbondale  
M.S., 1978, Environmental Engineering, Southern Illinois University, Carbondale  
Years of Experience: 12



## **8.0 DISTRIBUTION LIST**

---

### **Department of Defense Agencies**

**AFCEE/ESER  
8106 Chennault Road  
Brooks AFB, Texas 78235-5318  
Attn: Marion Erwin**

**940th ARG/CC  
Mather AFB, California 95655**

**HQ AFMC/CEVC  
Wright-Patterson AFB, Ohio 45433-5001  
Attn: Lynn Engleman**

**HQ AFRES/CEPV  
155 2nd Street  
Robbins AFB, Georgia 31098-1635  
Attn: Toni Thorne**

**SM-ALC/EMRP  
3200 Peacekeeper Way, Suite 11  
McClellan AFB, California 95652-1036**

### **Federal, State, and Local Government Agencies**

**California Department of Water Resources  
Reports Review  
P.O. Box 942836  
Sacramento, California 94236-0001**

**California Regional Water Quality Control Board  
Central Valley Region  
3443 Routier Road  
Sacramento, California 95819-2694**

**California Waste Management Board  
8800 Cal Center Drive  
Sacramento, California 95826**

**Office of the Governor  
Office of Planning Research  
State Clearinghouse  
1400 10th Street, Room 121  
Sacramento, California 95814**

**Environmental Protection Agency  
Region IX  
EIS Review Section  
75 Hawthorne Street  
San Francisco, California 92008**

**State Historic Preservation Officer  
Office of Historic Preservation  
P.O. Box 942896  
Sacramento, California 95812**

**Libraries**

**Del Paso Heights Library  
920 Grand Avenue  
Sacramento, California 95838**

**North Highlands Library  
3601 Plymouth Drive  
North Highlands, California 95660**

**Rio Linda Library  
902 Oak Lane  
Rio Linda, California 95673**

## **9.0 REFERENCES**

---

ACENTECH, 1990. Typical Sound Levels Graph

Air Resources Board, 1991. Area Designations for State Ambient Air Quality Standards, Air Quality Data Review Section, Air Quality Data Branch, Technical Support Division, California, July.

Basset, S., 1992. Data from Basset, SM-ALC Public Affairs to V. Izzo, The Earth Technology Corporation, regarding noise complaints from 1989 - 1991.

CH2M HILL, 1992. Environmental Assessment for the KC-135 Program Depot Maintenance Workload, Volume I, II, and Decision Notice, Delivery Order 5023, March.

Council on Environmental Quality, 1978. Regulations for Implementing the Procedural Provisions of the National Environment Policy Act.

Diehl, E., 1992a. Cultural Resource Assessment for Proposed Fire Extinguisher Shop, McClellan Air Force Base, California, September.

Diehl, E., 1992b. Cultural Resource Assessment for Proposed Squadron Operations/Group Headquarters Facility Alternatives A and B, and Firefinding Radar Testing, McClellan Air Force Base, California, December.

Fagin, Captain Guy T., 1988. Manual Calculation Methods for Air Pollution Inventories, U.S. Air Force, Occupational and Environmental Health Laboratory, Brooks Air Force Base, Texas, USAF 88-070EQ0111EEB, May.

Jennings, J., 1978. Ancient North Americans, W.H. Freeman and Company, New York.

Military Traffic Management Command Transportation Engineering Agency, 1991. Traffic Engineering Study, McClellan AFB, California, December.

Nelson, Maj. N.S., and 2LT C. Knaggs, 1992. U.S. Air Force Requirements and Management Plan (RAMP), PRJY939010 Hydrant Refueling, McClellan AFB, February.

North Central Information Center, 1989. Record Search for McClellan AFB, Sacramento County, August.

Radian Corporation, 1991. Installation Restoration Program (IRP) Stage 5, Remedial Investigation/Feasibility Study, Final Comprehensive CERCLA Work Plan for McClellan AFB, California, July.

Smithsonian Institution, 1978. Handbook of North American Indians, Volume 8, California.

- Sacramento County Planning and Community Development Department, 1985. Sacramento County General Plan.
- Sacramento County Planning and Community Development Department, 1991. Sacramento County General Plan.
- SMAQMD, 1991. Sacramento 1991 Air Quality Attainment Plan, Sacramento Metropolitan Air Quality Management District, Sacramento, CA, May.
- SMAQMD, 1992. 1990 Emission Inventory for McClellan Air Force Base, Sacramento Metropolitan Air Quality Management District, Sacramento, CA, March.
- Segal, H.M., 1988. A Microcomputer Pollution Model for Civilian Airports and Air Force Bases, U.S. Department of Transportation, Federal Aviation Administration, Office of Environmental and Energy, Washington, D.C., FAA FFA-EE-88-4/6; United States Air Force, Engineering Service Center, Tyndall Air Force Base, Florida, USAF ESL-TR-88-53/55, August.
- Tyndall Air Force Base, 1992. Aircraft Operations Data on McClellan AFB from AFCESA/DMPO, June.
- U.S. Air Force, 1983. Air Installation Compatible Use Zone (AICUZ) Report. McClellan AFB, California, September.
- U.S. Air Force, 1985. Construct Depot Warehouse Addition (Phase II) EIAP, August.
- U.S. Air Force, 1987. Comprehensive Plan for Sacramento Air Logistics Center McClellan AFB California, August.
- U.S. Air Force, 1989. McClellan Today, McClellan AFB and Sacramento Air Logistics Center Information Pamphlet, January.
- U.S. Air Force, 1991. Sacramento Air Logistics Center, McClellan AFB, Regulation 19-2, Spill Prevention and Control Countermeasures SPlan 19-2.
- U.S. Air Force, 1992a. Final Environmental Impact Statement. Disposal and Reuse of Mather Air Force Base, California, April.
- U.S. Air Force, 1992b. Pre-Design Conference Meeting Minutes for FY-93 BCL Base Realignment and Closure (BRAC) Project, McClellan AFB, February.
- U.S. Air Force, 1992c. Sacramento Air Logistics Center, McClellan AFB, Hazardous Waste Management Plan, June.
- U.S. Army Corps of Engineers, 1980. McClellan AFB Sacramento County, California, Cultural Resources Reconnaissance Survey and Literature Review of the Proposed Land Acquisition Parcels.

U.S. Army Corps of Engineers, 1992. Pre-Design Conference Meeting Minutes Adjustments for BC-AFRES Hydrant Refueling System, McClellan AFB, March.

U.S. Environmental Protection Agency, 1985. AP-42 Compilation of Air Pollutant Emission Factors. Volume 1 Stationary Point and Area Sources, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, September.

U.S. Fish and Wildlife Service, 1991. Species listed of the Maggie Creek Investigation for Flood Protection to the Area within and West of McClellan AFB, Sacramento County, California, April.

**THIS PAGE INTENTIONALLY LEFT BLANK**

**APPENDIX A**  
**CORRESPONDENCE**

OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION  
P O. BOX 942896  
SACRAMENTO 94296-0001  
(916) 653-6624  
FAX (916) 653-9824



July 10, 1992

REPLY TO: HUD920422A

Thomas J. Duvall, Lt. Col., USAF  
Associate Director  
Environmental Management  
Department of the Air Force  
Headquarters Sacramento Air Logistics Center  
MCLELLAN AIR FORCE BASE CA 95652-5990

Dear Col. Duvall:

RE: REALIGNMENT OF THE 940 AIR FORCE RESERVE REFUELING GROUP (AFREG) TO  
MCLELLAN AIR FORCE BASE

Thank you for forwarding additional information about the above referenced undertaking. I concur in your determination that no historic properties, as defined by 36 CFR 800.2(e), exist in the area of potential effects for this undertaking. Accordingly, your agency has fulfilled its responsibilities pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800. However, please note that your agency may have additional responsibilities pursuant to 36 CFR Part 800 under any of the following circumstances:

1. If any person requests the Advisory Council on Historic Preservation to review your determination in accordance with 36 CFR 800.6(e);
2. If the undertaking changes in ways that could affect historic properties (36 CFR 800.5[c]);
3. If previously undocumented properties are discovered during implementation of this undertaking or if a known historic property will be affected in an unanticipated manner (36 CFR 800.11);
4. If a property that was to be avoided has been inadvertently or otherwise affected (36 CFR 800.4[c] and 36 CFR 800.5); or
5. If any condition of the undertaking, such as delay in implementation or implementation in phases over time, may justify reconsideration of the current National Register status of properties within the undertaking's area of potential effects (36 CFR 800.4[c]).

Your consideration of historic properties in the project planning process is appreciated. If you have any questions, please call Staff Historian Lucinda Woodward at (916) 653-9116.

Sincerely,

  
Steade R. Craig, AIA, Acting  
State Historic Preservation Officer

JUL 16 RECD