Environmental Assessment

Military Family Housing Privatization
Maxwell Air Force Base

United States Air Force
Air Education and Training Command
Maxwell Air Force Base, Alabama

June 2005

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14. ABSTRACT

The Air Force proposes to privatize military family housing (MFH) at Maxwell AFB. The purpose of the proposed and alternative actions is to provide MFH at Maxwell AFB Alabama that meets Air Force housing standards and the ongoing and projected housing requirements for the installation. The action is needed to provide modern and efficient housing for military personnel and their dependents stationed at Maxwell AFB. The Proposed Action would privatize 808 MFH units and includes acquisition of land adjacent to Maxwell Main Base, known as Riverside Heights. MFH renovation, demolition and construction would be accomplished by a contractor who would manage the MFH units for a period of 50 years. The underlying land would be leased to the contractor. Alternative 1 is the same as the Proposed Action except that Riverside Heights would not be acquired; all new construction would occur in existing MFH areas on Maxwell AFB with a resulting increase in the density of houses on Maxwell AFB and a corresponding decrease in open space and the size of play areas. Alternative 2 differs from the Proposed Action in that Riverside Heights would not be acquired, and with the exception of the historic homes, all MFH on Maxwell AFB would be demolished. This alternative also proposes more new construction and less renovation of the existing units. The Proposed Action and Alternatives 1 and 2 would each have 808 MFH units post project completion. Under Alternative 3, an additional 149 MFH units would be constructed, resulting in 957 MFH units post project completion. Riverside Heights, and all structures currently at that location, would also be acquired as part of Alternative 3. Structures at Riverside Heights would be demolished. The following resources were identified for study in this EA: noise, air quality, water resources infrastructure and utilities, hazardous materials and wastes, cultural resources, socioeconomic resources, and environmental justice.

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FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT
MILITARY FAMILY HOUSING PRIVATIZATION

MAXWELL AIR FORCE BASE, ALABAMA

AGENCY: 42nd Air Base Wing (42 ABW), Maxwell Air Force Base (AFB), Alabama.

BACKGROUND: The military family housing (MFH) requirement at Maxwell AFB is 808 units, 14 more than the current number. Of the existing 794 units, 453 require whole-house renovation or replacement because these units no longer meet minimum Air Force requirements for adequate, modern housing. Military Construction funding is not available for MFH construction, renovation, and replacement. To build and renovate MFH units faster and at a lower cost, the Air Force proposes to privatize MFH at Maxwell AFB by entering into a real estate transaction with a private contractor to plan, design, develop, demolish, construct, renovate, replace, own, operate, maintain, and manage MFH for military personnel for a period of 50 years.

PROPOSED ACTION: The existing inventory of 794 MFH units at Maxwell AFB would be conveyed to a private developer who would then, through a combination of construction, renovation, and demolition activities, establish and maintain 808 units. The Proposed Action includes the acquisition of land adjacent to the installation known as Riverside Heights and the extension of the base perimeter fence. No structures currently on Riverside Heights would exist when the property is conveyed to the Air Force by the City of Montgomery except for a building named the Central Office, which is listed as a Montgomery city landmark. MFH units would be built in Riverside Heights in addition to ones to be managed on Maxwell AFB.

SUMMARY OF FINDINGS FOR PROPOSED ACTION:

Noise. Temporary noise impacts will be generated by vehicles and equipment involved in demolition, construction, and renovation activities. Short-duration exposures to noise levels above the ambient daytime noise level in MFH areas will occur, and annoyances to noise-sensitive receptors (homes) adjacent to the construction locations can be expected.

Air Quality. Temporary heavy equipment exhaust and fugitive dust emissions would be generated during demolition, construction, and renovation activities. Emissions would not be considered regionally significant, and a conformity determination is not required.

Water Resources. Demolition and construction activities will cause insignificant short-term impacts to surface water quality. Shallow groundwater on the installation has been impacted by past installation activities, but due to the depth to groundwater significant impacts associated with potentially contaminated shallow groundwater are not expected.

Infrastructure and Utilities. Short-term impacts to infrastructure and utilities will include minimal increases in: (1) Solid waste generation and disposal; (2) Traffic counts and construction impact to road surface conditions; (3) Soil erosion and sediment loadings in stormwater runoff. There will be a slight increase in sanitary sewer discharge, potable water consumption, and electricity/natural gas consumption on the installation associated with the addition of 14 MFH units. No overall change in community sanitary sewer discharge, potable water consumption, or electricity/natural gas consumption would occur

because regional population numbers will not change. No significant impacts to infrastructure and utilities are expected.

Hazardous Materials and Wastes. Hazardous materials will be managed in compliance with Maxwell AFB, state, and federal best management practices, including any asbestos and lead-based paint (LBP) debris generated by demolition projects. Soils potentially contaminated with pesticides or LBP, excavated as part of contractor project activities, will be sampled to ensure appropriate handling and disposal. Environmental Restoration Program (ERP) sites occur within the MFH areas, but it is unlikely that construction or demolition activities will encounter contaminated groundwater due to the estimated depth to groundwater. Significant impacts are not anticipated.

Cultural Resources. Construction and demolition activities on Maxwell AFB will have no effect on historic properties. Renovation activities will affect these resources, but will have no adverse effect because all activities will be conducted in accordance with a Programmatic Agreement (PA) prepared on this action, as well as the Maxwell AFB Cultural Resources Management Plan and the Secretary of the Interior's Guidelines for Rehabilitation. Construction at Riverside Heights has the potential to adversely affect archaeological resources. Mitigation for any potential adverse effect will include development of a sampling plan and if necessary, a mitigation plan developed in consultation with the State Historic Preservation Officer (SHPO) and Indian Tribes that may attach religious or cultural importance to the affected property.

Socioeconomic Resources. There will be no significant change in population size or educational requirements. There will be positive impacts to housing and quality of life for military families through modernization of housing units. There will be short-term positive impacts to the local economy from increased employment and funds expended for project activities.

Environmental Justice. Short-term adverse impacts in resource categories would not result in disproportionately high and adverse effects to minority and low-income populations.

SUMMARY OF FINDINGS FOR ALTERNATIVE 1: This alternative differs from the Proposed Action in that the Riverside Heights area would not be acquired. Impacts associated with this alternative would be the same as those described for the Proposed Action but there would be slightly greater short-term air emissions and solid waste generation and disposal. Although slightly greater, impacts would not be significant.

SUMMARY OF FINDINGS FOR ALTERNATIVE 2: This alternative is similar to Alternative 1 and differs from the Proposed Action in that the Riverside Heights area would not be acquired. All MFH units on Maxwell AFB would be demolished, except those homes listed or eligible for listing on the National Register of Historic Places (NRHP). Impacts associated with this alternative would be the same as those in the Proposed Action except that there would be (1) slightly greater short-term air emissions; (2) short-term increases in ground disturbance, solid waste generation and construction and demolition traffic; and (3) a larger number of families would likely be required to move off-base during project activities. Although these impacts are slightly greater, they are not significant.

SUMMARY OF FINDINGS FOR ALTERNATIVE 3: This alternative includes acquisition from the City by the Air Force of the Riverside Heights area and all structures currently located on that property. Acquisition would be contingent upon a previous determination by the SHPO that these structures are ineligible for inclusion on the NRHP, with the exception of the Central Office. As in Alternative 2, all MFH units on Maxwell AFB would be demolished, except those listed or eligible for the NRHP. All existing structures on Riverside Heights, with the exception of the Central Office, would also be demolished. This alternative also includes building 149 additional units (957 total units compared to 808

units in the Proposed Action and all other alternatives). Alternative 3 would produce the most short-term air emissions, ground disturbance, solid waste generation/ disposal, construction traffic, and families required to relocate off the installation during project activities. Due to the current management practices in place for those resource categories, no significant impact is expected.

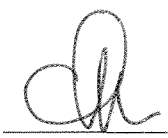
SUMMARY OF FINDINGS FOR NO ACTION ALTERNATIVE: Under the No Action Alternative, Maxwell AFB would retain all 794 MFH units. Due to limited funding, there would be no whole-house renovations or periodic capital repair and replacements. MFH at Maxwell AFB would continue to deteriorate and military families would continue to live in homes that do not meet Air Force standards.

SUMMARY OF CUMULATIVE IMPACTS: The cumulative impact of implementing this action along with other past, present, and future projects in the Region of Influence were assessed in the attached EA and no significant cumulative impacts were identified.

SUMMARY OF PUBLIC COMMENTS: Several comment letters were received during the public comment period, resulting in eleven unique comments. Three of the comments noted concurrence with the EA findings or noted that no comments would be submitted. The remaining comments were associated with the disposition of historic structures at Riverside Heights. Because the Air Force action assumes that Riverside Heights will be acquired unencumbered from the City of Montgomery, disposition of historic structures at Riverside Heights is not within the scope of the Air Force action. This Finding of No Significant Impact is predicated upon actions associated with the disposition of historic structures at Riverside Heights being complete before Air Force acquisition of the property.

MITIGATIVE ACTIONS: Mitigative measures must be implemented as described in the attached EA and this FONSI. Provided that the terms of the completed PA, the Maxwell AFB Cultural Resources Management Plan, and the Secretary of the Interior's Guidelines for Rehabilitation are followed, no further mitigative actions are required for historic resources. Under the Proposed Action and Alternative 3, any adverse effect upon archaeological resources at Riverside Heights will be mitigated through the development of a sampling plan, and if necessary, an evaluation plan and a mitigation plan or data recovery plan in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the property.

DECISION: Based upon the implementation of specific mitigation measures regarding historic and archeological resources, and my review of the attached environmental assessment incorporated by reference, I conclude that none of the alternatives nor the proposed action will have a significant direct, indirect, or cumulative impact upon the environment. Accordingly, the requirements of the National Environmental Policy Act, regulations promulgated by the President's Council on Environmental Quality, and Title 32 Code of Federal Regulations Part 989 are fulfilled and an environmental impact statement is not required.



3 Aug 05

CHRISTOPHER W. BOWMAN
Colonel, USAF
Vice Commander, 42d Air Base Wing

Date

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Environmental Assessment

Military Family Housing Privatization

Prepared For:

Department of the Air Force
42nd Air Base Wing
Maxwell Air Force Base, Alabama

June 2005

Cover Sheet

COVER SHEET

Responsible Agency: 42nd Air Base Wing (ABW), Maxwell Air Force Base, Alabama.

Proposed Action: Privatize Military Family Housing at Maxwell AFB, Montgomery County, Alabama.

Point of Contact: Bobby Stanford, 42 MSG/CEH, 60 West Maxwell Blvd., Bldg. 835, Maxwell AFB, Alabama, 36112, (334) 953-9426. Comments on the Draft EA were requested by May 25, 2005.

Report Designation: Environmental Assessment (EA).

Abstract: The Air Force proposes to privatize military family housing (MFH) at Maxwell AFB. The purpose of the proposed and alternative actions is to provide MFH at Maxwell AFB, Alabama that meets Air Force housing standards and the ongoing and projected housing requirements for the installation. The action is needed to provide modern and efficient housing for military personnel and their dependents stationed at Maxwell AFB.

The Proposed Action would privatize 808 MFH units and includes acquisition of land adjacent to Maxwell Main Base, known as Riverside Heights. MFH renovation, demolition and construction would be accomplished by a contractor who would manage the MFH units for a period of 50 years. The underlying land would be leased to the contractor. Alternative 1 is the same as the Proposed Action except that Riverside Heights would not be acquired; all new construction would occur in existing MFH areas on Maxwell AFB with a resulting increase in the density of houses on Maxwell AFB and a corresponding decrease in open space and the size of play areas. Alternative 2 differs from the Proposed Action in that Riverside Heights would not be acquired, and with the exception of the historic homes, all MFH on Maxwell AFB would be demolished. This alternative also proposes more new construction and less renovation of the existing units. The Proposed Action and Alternatives 1 and 2 would each have 808 MFH units post project completion. Under Alternative 3, an additional 149 MFH units would be constructed, resulting in 957 MFH units post project completion. Riverside Heights, and all structures currently at that location, would also be acquired as part of Alternative 3. Structures at Riverside Heights would be demolished.

The following resources were identified for study in this EA: noise, air quality, water resources, infrastructure and utilities, hazardous materials and wastes, cultural resources, socioeconomic resources, and environmental justice.

Privacy Advisory

Letters or other public comment documents provided may be published in the Final EA. Information provided will be used to improve the analysis of issues identified in the Draft EA. Comments will be addressed in the Final EA and made available to the public. However, only the name of the individual and specific comment will be disclosed.

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Acronyms and Abbreviations

ACRONYMS AND ABBREVIATIONS

AAFES	Army and Air Force Exchange Service
ABW	Air Base Wing
ACHP	Advisory Council on Historic Preservation
ACM	asbestos containing material
ADEM	Alabama Department of Environmental Management
AETC	Air Education and Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone
AIRFA	American Indian Religious Freedom Act
AOC	area of concern
APE	area of potential effect
AQCR	Air Quality Control Region
ARPA	Archaeological Resources Protection Act
AU	Air University
AW	Airlift Wing
BAH	basic allowance for housing
bgs	below ground surface
C&D	construction and demolition
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CE	Civil Engineering
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
COC	community of comparison
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DNL	day-night average sound level
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
°F	degrees Fahrenheit
FAA	Federal Aviation Administration

ACRONYMS AND ABBREVIATIONS (CONT.)

FHMP	Family Housing Master Plan
FONSI	Finding of No Significant Impact
ft	foot
FY	Fiscal Year
HABS	Historic American Building
HRMA	Housing Requirements Market Analysis
HUD	Housing and Urban Development
HVAC	Heating, Ventilation and Air Conditioning
IICEP	Intergovernmental and Interagency Coordination for Environmental Planning
kcf	thousand cubic feet
kwh	kilowatt hours
LBP	lead-based paint
lbs	pounds
LTM	long-term monitoring
MILCON	Military Construction
MFH	Military Family Housing
mgd	million gallons per day
mph	miles per hour
MSA	metropolitan statistical area
MSDS	material safety data sheet
NA	not applicable
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Grave Protection and Repatriation Act
NCO	Non-commissioned Officer
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NHPA	National Historic Preservation Act
NLR	noise level reduction
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NRHP	National Register of Historic Places
O_3	ozone
OSD	Office of the Secretary of Defense
OSHA	Occupational Safety and Health Administration
PPE	personal protective equipment
$PM_{2.5}$	particulate matter equal or less than 2.5 micrometers in diameter
PM_{10}	particulate matter equal or less than 10 micrometers in diameter
POL	petroleum, oils, and lubricants
POV	personally operated vehicle
ppm	parts per million
PVC	polyvinyl chloride
PWA	Public Works Administration
RCRA	Resource Conservation and Recovery Act

ACRONYMS AND ABBREVIATIONS (CONT.)

SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOQ	Senior Officers Quarters
SOx	sulfur oxides
SPL	sound pressure level
sq ft	square feet
SWPPP	Stormwater Pollution Prevention Plan
tpy	tons per year
TSCA	Toxic Substances Control Act
TSP	total suspended particulate
$\mu g/m^3$	micrograms per cubic meter
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USHA	United States Housing Authority
UST	underground storage tank
VISTAS	Visibility Improvement State and Tribal Association of the Southeast
VOC	volatile organic compound

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Chapter 1

Purpose of and Need for Action

CHAPTER 1
PURPOSE OF AND NEED FOR ACTION

This chapter has six parts: a statement of the purpose of and need for action, a description of the location of the Proposed Action, identification of the decision to be made, a description of the scope of the environmental review, identification of applicable regulatory requirements, and an introduction to the organization of the document.

1.1 PURPOSE OF AND NEED FOR ACTION

The military family housing (MFH) requirement at Maxwell Air Force Base (AFB) is 808 units (USAF 2003). Maxwell AFB (the Base) currently has 794 units in its inventory; of these, 453 require whole-house renovation or replacement because these units no longer meet minimum Air Force requirements for adequate, modern housing. Of the remaining 341 units, 234 require only minor renovation and 107 do not require renovation.

The base maintains a waiting list of personnel who wish to reside in MFH. The waiting list for on-base housing identifies the categories, number on the waiting list, and range of waiting times. The average waiting time for all military members waiting for MFH on-base, regardless of rank and bedroom requirements, is approximately 8 months. The waiting time as of January 2004 for each grade group generally ranges from 0 to 12 months, depending on the size of house desired (number of bedrooms). The largest number of families on the waiting list, by category, is Junior Non-Commissioned Officers (NCOs), requiring 2-, 3-, and 4-bedroom units, with 77 families waiting from 0 to 12 months. The size of the waiting list (112 names) indicates military families' desire to occupy government housing and supports renovation and replacement requirements. However, Military Construction (MILCON) funding is not available for MFH renovation and replacement.

On 11 February 1996, the National Defense Authorization Act for Fiscal Year 1996 (Public Law 104-106), containing the MFH privatization initiative, was signed into law. The Act allows the Department of Defense (DoD) to work with the private sector to build and renovate military housing. The goals of this initiative are to obtain private capital to leverage government dollars, make efficient use of limited resources, and use a variety of private-sector approaches to build and renovate MFH faster and at a lower cost. This initiative addresses the deteriorating quality of DoD-owned housing as well as the shortage of affordable, quality private housing available to service people and their families. While the DoD policy is to rely on the private sector to provide suitable housing, it is also directed to only provide housing for families that cannot find suitable housing in the community. Military salaries for many enlisted personnel limit the ability to obtain quality, affordable housing within a reasonable commuting distance. In addition, many communities do not have enough affordable, quality rental housing.

Family Housing Master Plans (FHMPs) provide a strategy to integrate and prioritize construction, operations, and maintenance funding with private-sector financing, and identify the most cost-effective and time-efficient investment option at the installation. MFH privatization at Maxwell AFB would allow the installation to achieve the 42nd Air Base Wing (ABW),

Headquarters Air Education and Training Command (AETC), and DoD objectives to provide adequate MFH.

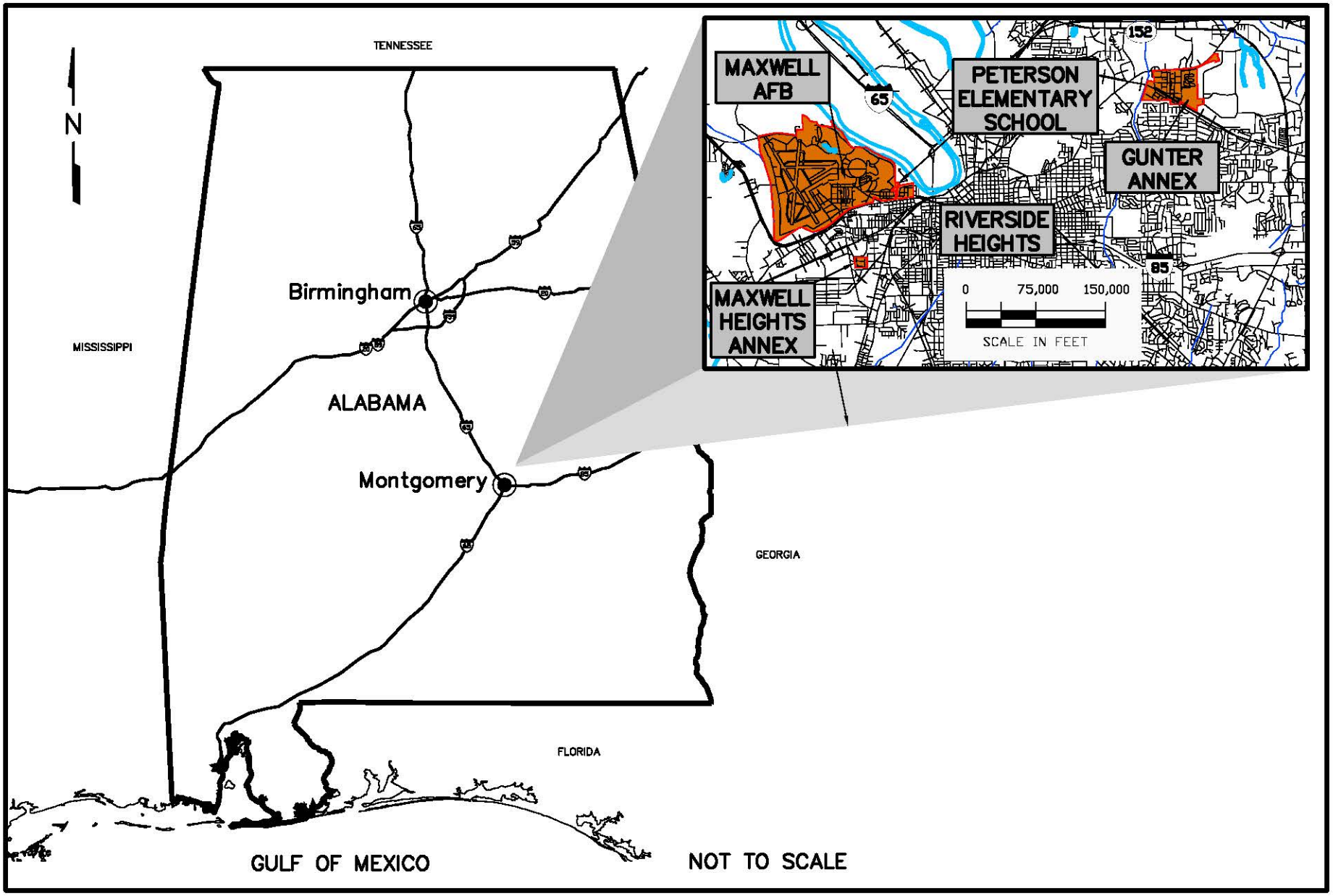
The purpose of the Proposed Action is to provide MFH at Maxwell AFB, Alabama, that meets Air Force housing standards and the ongoing and projected housing requirements for the installation. The action is needed to provide modern and efficient housing for military personnel and their dependents stationed at Maxwell AFB. The housing must be upgraded to meet current life safety codes and to provide a comfortable and appealing living environment comparable to the off-base community and in accordance with Air Force guidelines for quality of life and floor space requirements. All replacement units would be designed to meet "whole house" standards in accordance with Air Force guidelines. The term "whole house" refers to a comprehensive approach to the improvement, repair, and replacement of MFH. Under this approach, needs are evaluated comprehensively and required actions are performed all at once, rather than on a piecemeal basis (USAF and AFCEE 1995).

1.2 LOCATION OF THE PROPOSED ACTION

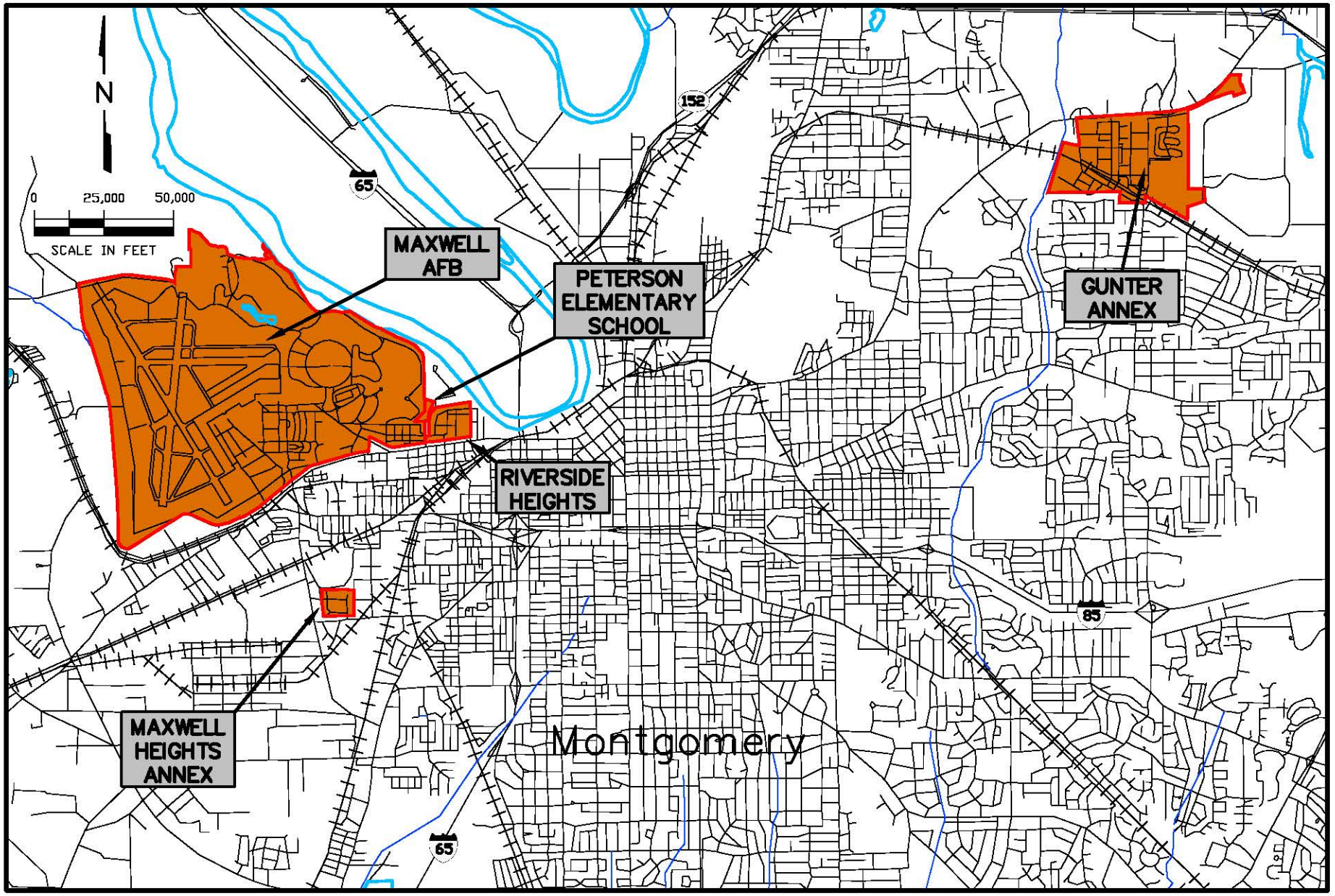
Maxwell AFB is located in Montgomery County, within the city limits of Montgomery, Alabama, and comprises the Main Base, Maxwell Heights Annex and Gunter Annex (Figures 1-1 and 1-2). The Main Base includes approximately 2,477 acres. Maxwell Heights Annex, an off-base area, is located approximately 4,000 feet south of the Main Base and includes approximately 31 acres. Gunter Annex, located approximately 10 miles east of the Main Base, includes approximately 372 acres. Riverside Heights, an off-base property, is located adjacent to the Main Base and will be considered as a possible location for future MFH construction. Riverside Heights is currently a public housing area owned by the Montgomery Housing Authority.

There are seven MFH areas on the Main Base: the 500 Area, 600/700 Area, 700 Row Area, New Area, No Hundred Area, Senior Officers Quarters (SOQ), and Juniper Area. All of the MFH units on the Main Base are located in the southeastern portion of the installation; Riverside Heights is located adjacent to the southeast corner of the Main Base (Figure 1-3), separated only by a small road that services Peterson Elementary School.

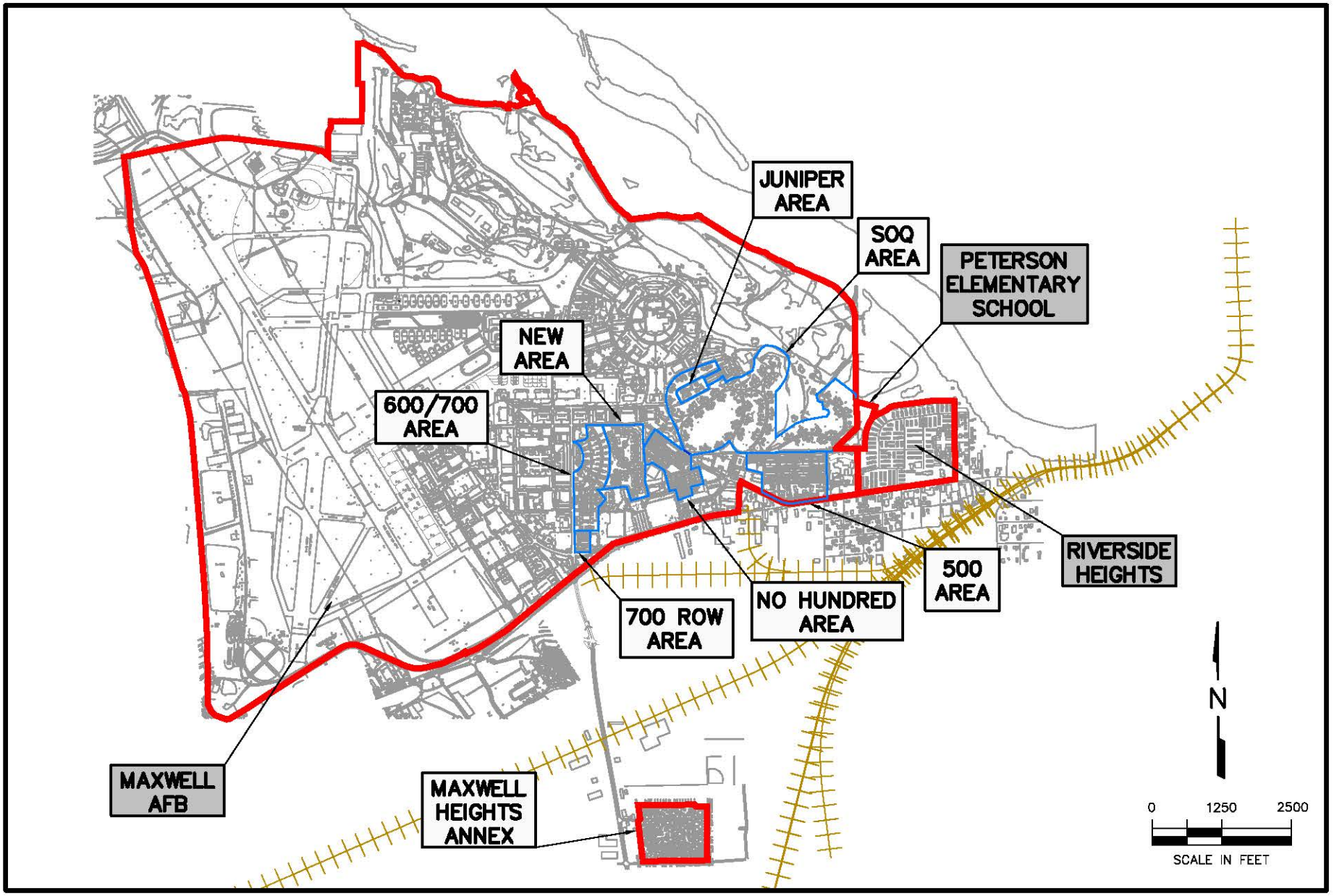
There are three MFH areas on Gunter Annex: New Housing, located in the northwest portion of the Annex; 300 Row, located along the west side of the Annex; and the 1600 Area, located in the northeastern corner of the Annex (Figure 1-4).



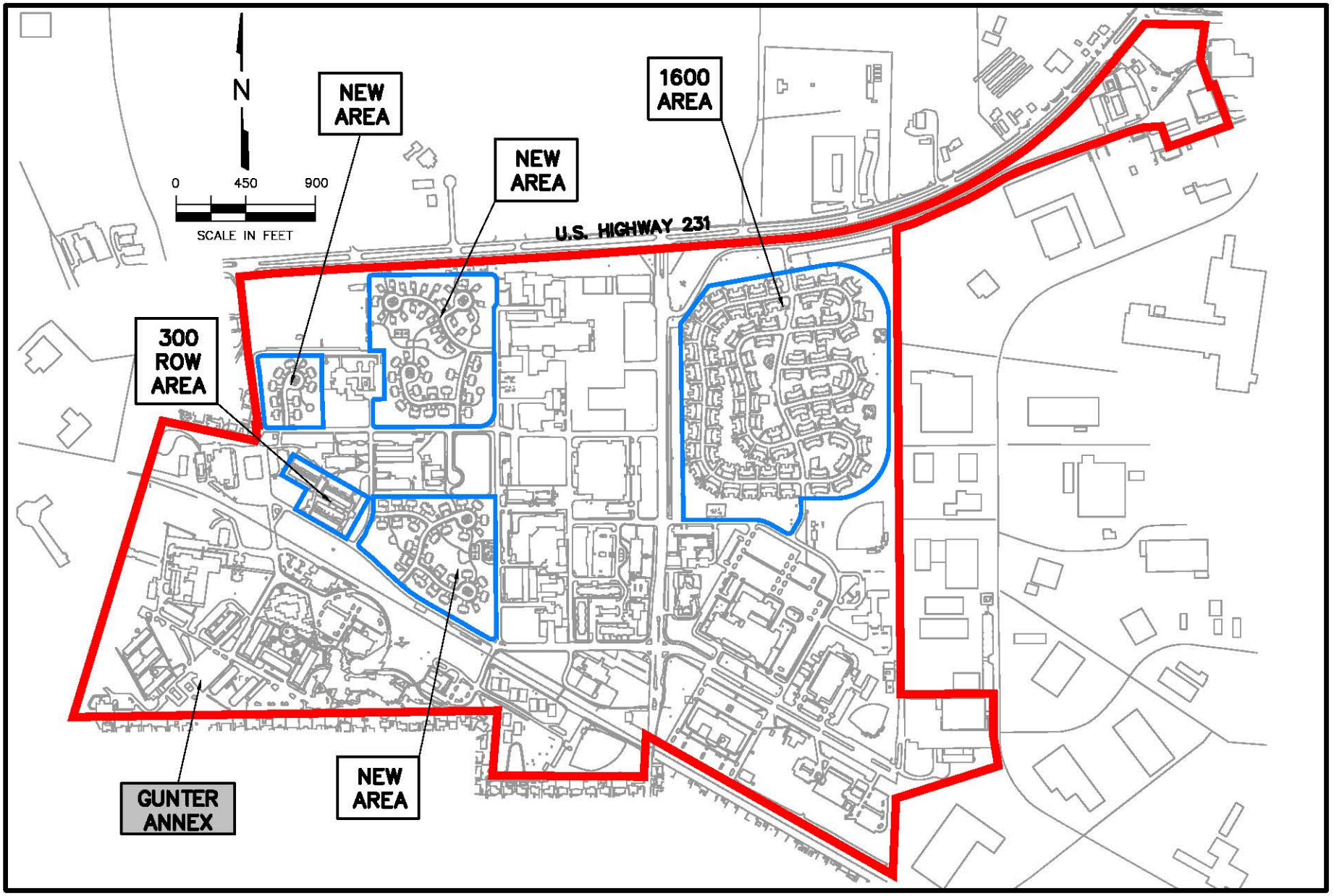
Regional Location Map	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 1-1 Page 1-3



Vicinity Map	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 1-2 Page 1-4



Location of Housing on Main Base and Location of Riverside Heights	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 1-3 Page 1-5



Location of Housing on Gunter Annex

Maxwell Air Force Base
Environmental Assessment
Military Family Housing Privatization

Figure 1-4

1.3 DECISION TO BE MADE

The analysis in this Environmental Assessment (EA) evaluates the potential environmental consequences of actions associated with MFH privatization including demolition, construction, and renovation activities. Based on this information, the Air Force will determine whether to implement the Proposed Action, Alternative 1, Alternative 2, Alternative 3, or take no action (No Action Alternative). As required by the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347) and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project, and be available to inform decision-makers of the potential environmental impacts of selecting the Proposed Action, Alternative 1, Alternative 2, Alternative 3, or No Action Alternative.

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

NEPA of 1969, as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) has issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental impact analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] Sections 1500-1508) and 32 CFR 989 (Environmental Impact Analysis Process), 15 July 1999, and amended 28 March 2001. These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

This EA identifies, describes, and evaluates the potential environmental impacts that are associated with MFH privatization such as demolition, construction, and renovation of MFH, taking into consideration possible cumulative impacts from other actions. The potential environmental effects of taking no action are also described. As appropriate, the affected environment and environmental consequences of the action may be described in terms of a regional overview or a site-specific description. Fiscal year (FY) 2003 or the most current information is used as the baseline condition.

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued by the President 11 February 1994. In the EO, the President instructed each federal agency to make "achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Adverse is defined by the Federal Interagency Working Group on Environmental Justice as 'having a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms.'" This EA will determine if the proposed or alternative actions would result in adverse effects to low-income or minority populations.

The Air Force has announced other independent actions for Maxwell AFB concurrent with the Proposed Action. The environmental impacts of these other actions, in most cases, have been analyzed in separate NEPA documents. In addition, other actions are planned for the

surrounding community (see Section 2.6). Through Intergovernmental and Interagency Coordination for Environmental Planning (IICEP), requests were made for information on these and other planned actions in the surrounding community. IICEP correspondence and responses are included in Appendix A. This EA addresses the environmental impacts of these other actions only in the context of potential cumulative impacts, if any. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

1.4.1 Resource Areas Addressed in Detail

Resource areas that could be affected by the proposed or alternative actions have been selected to allow for a comprehensive analysis of potential impacts. The following resource areas are discussed in detail in the EA:

- Noise
- Air Quality
- Water Resources
    - Surface Water
    - Groundwater
- Cultural Resources
- Hazardous Materials and Wastes (including Environmental Restoration Program [ERP] sites)
- Infrastructure and Utilities
    - Sanitary Sewer
    - Potable Water
    - Solid Waste
    - Drainage
    - Transportation
    - Electricity/natural gas
- Socioeconomic Resources
    - Population
    - Housing
    - Education
    - Economy
- Environmental Justice

1.4.2 Resource Topics Eliminated from Detailed Analysis

Some resource areas or some aspects of resource areas would not be affected by the proposed or alternative actions. Resource areas that have been eliminated from further study in this document and the rationale for eliminating them are presented below:

- Airspace and Aircraft Operations. There would be no change in the number of aircraft assigned to the installation and no change in the airspace associated with aircraft operations. Therefore, airspace and aircraft operations would not be affected by the proposed or alternative actions.

- Land Use. There would be no change in land use on or off the installation. The housing areas would continue to be used for housing. Therefore, land use would not be affected by the proposed or alternative actions.

- Floodplains. There are no floodplains located within the housing areas (USAF 2000). Demolition, construction, and renovation activities would be limited to the housing areas; therefore, floodplains would not be affected by the proposed or alternative actions.

- Earth Resources. Activities associated with implementation of the proposed or alternative actions would occur within an area where soils have been disturbed and modified by prior housing construction. Other than minor grading activities, topography would not change. Impacts related to stormwater runoff are addressed in detail under water resources in Chapters 3 and 4 of this EA. Therefore, earth resources were eliminated from detailed analysis.

- Biological Resources. Vegetation within the housing areas consists of native and non-native tree species, landscaping, and grass within highly modified areas of minimal and non-unique habitat value. There are no records of threatened or endangered species within the housing areas, and there are no wetlands located within or adjacent to these areas. Demolition, construction, and renovation activities would be limited to the housing areas; therefore, natural biological resources would not be affected by the proposed or alternative actions.

- Occupational Health and Safety. The safety and health impacts arising during the proposed demolition, construction, and renovation activities will not be evaluated because all contractors would be responsible for compliance with applicable Occupational Safety and Health Administration (OSHA) regulations specifying appropriate protective measures for all employees.

In addition to the resource topics identified above, Maxwell Heights Annex also will be eliminated from detailed analysis. Maxwell Heights Annex is an off-base area (see Figure 1-2) formerly used for MFH. This area is no longer used for MFH due to its unsuitability for this purpose, and is currently vacant. The area is not included in MFH privatization under any of the alternatives, and future disposition of this property is unknown at this time. Any future disposition of Maxwell Heights Annex, when proposed, will be analyzed in a separate document and is not included in the analysis within this EA.

1.5 APPLICABLE REGULATORY REQUIREMENTS

This EA is part of the EIAP for the proposed project as set forth in 32 CFR 989, 15 July 1999, and amended 28 March 2001; CEQ regulations; DoD Directive 6050.1 (Environmental Effect in the United States of DoD Actions, 30 July 1979); as well as DoD 4715.9 (Environmental Planning and Analysis).

NEPA, as amended, requires federal agencies to consider, as part of the decision-making process, the environmental consequences of their proposed and alternative actions. The Air Force considers the potential environmental impacts identified during the EIAP in its decision. The following paragraphs describe the laws and regulations that apply or may apply to the proposed and alternative actions.

1.5.1 Interagency and Intergovernmental Coordination

Federal, state, and local agencies with jurisdiction that could be affected by the proposed or alternative actions have been notified and consulted. A complete list of the agencies consulted is presented in Chapter 6 and IICEP letters and responses are presented in Appendix A. This coordination fulfills the Interagency Coordination Act and EO 12372, which require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. EO 12372 is implemented by the Air Force in accordance with Air Force Instruction (AFI) 32-7060, Interagency and Intergovernmental Coordination for Environmental Planning.

1.5.2 State Historic Preservation Office

Potentially affected areas have been studied to determine impacts to historical or archaeological sites. As mandated by the National Historic Preservation Act (NHPA), the Air Force has coordinated with the Alabama State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP).

1.5.3 Permits

It would be the MFH contractor's responsibility to ensure permits are identified and obtained from the base, local, state, and federal agencies. The contractor would ensure that a Stormwater Pollution Prevention Plan (SWPPP) is completed and approved before initiating construction activities. In addition, the MFH contractor would obtain a construction stormwater permit from the Alabama Department of Environmental Management (ADEM) before any construction activities begin. Because the project would involve the disturbance of more than 1 acre, a Notice of Intent (NOI) under the general Alabama stormwater discharge permit should be filed with the Alabama Department of Environmental Management.

1.5.4 Other Regulatory Requirements

The EA considers all applicable laws and regulations, including but not limited to the following:

- Clean Air Act (CAA) (42 USC 7401 et seq.)
- AFI 32-7040, Air Quality Compliance
- EO 11990, Protection of Wetlands
- Clean Water Act (CWA), (33 USC 1251 et seq.)
- EO 11988, Floodplain Management
- Endangered Species Act (ESA) (16 USC 1531-1542)
- Pollution Prevention Act of 1990 (42 USC 13101 and 13102 et seq.)
- Archaeological Resources Protection Act
- Native American Graves Protection and Repatriation Act of 1991 (25 USC 3001 et seq.)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- AFI 32-7086, Hazardous Materials Management
- 42 ABW Plan 32-10
- 42 ABW Plan 32-11
- 42 ABW Plan32-12
- Civil Engineering (CE) Plan: Lead-Based Paint Management Plan
- CE Plan: Asbestos Management and Operation Plan
- Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et. seq.)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC 9601 et. seq.)

1.6 INTRODUCTION TO THE ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters:

Chapter 1 Contains a statement of the purpose of and need for action, the location of the Proposed Action, identification of the decision to be made, a summary of the scope of the environmental review, identification of applicable regulatory requirements, and a description of the organization of the document.

Chapter 2 Describes the history of the formulation of alternatives, describes the No Action alternative, identifies alternatives eliminated from further consideration, provides a detailed description of the Proposed Action, describes other action alternatives, summarizes other actions announced for Maxwell AFB and the surrounding community, provides a comparison matrix of environmental effects for all alternatives, identifies the preferred alternative, and describes mitigation measures.

Chapter 3 Contains a general description of the current conditions of the resources that potentially could be affected by the proposed or alternative actions.

Chapter 4 Provides an analysis of the environmental consequences of the proposed and alternative actions.

Chapter 5 Lists preparers of this document.

Chapter 6 Lists persons and agencies consulted in the preparation of this EA.

Chapter 7 Lists source documents relevant to the preparation of this EA.

Chapter 2

Description of the Proposed Action and Alternatives

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter has nine parts: a brief history of the formulation of alternatives, a description of the No Action alternative, identification of alternatives eliminated from further consideration, a description of the Proposed Action, a description of other action alternatives, identification of other proposed actions planned for Maxwell AFB and the surrounding community, a summary of environmental impacts of all alternatives, identification of the preferred alternative, and a table of proposed mitigation measures and best management practices.

2.1 HISTORY OF THE FORMULATION OF ALTERNATIVES

The Office of the Secretary of Defense (OSD) Planning Guidance requires that all Services "revitalize, divest through privatization, or demolish inadequate housing on or before 2010" (OSD 1997). The AETC goal is to accomplish this by 2007. In the absence of available MILCON funding, the 1996 Defense Authorization Act provides the Air Force and other Services with new ways to make this goal achievable. Specifically, the Air Force may use private capital to meet housing requirements if the installation FHMP finds that this approach is economically feasible.

The MFH requirement at Maxwell AFB is 808 units, 14 more than the current inventory of 794. Based on housing condition assessments, the Maxwell AFB Housing Office has determined that 296 units are in need of replacement and 157 units are in need of whole-house renovation. Therefore, 57 percent of the current housing inventory of 794 units is in need of replacement or whole-house renovation.

There is a significant desire of military personnel to occupy MFH at Maxwell AFB, as illustrated by a waiting list currently consisting of 112 names and a waiting period of up to 12 months for a family to be accommodated in MFH. The size of the waiting list illustrates the desire of military families to occupy government housing and supports the early renovation and replacement objectives of the 42nd ABW.

As a result of the poor condition of most MFH units, desire of military families to occupy MFH, and lack of MILCON funding, Maxwell AFB began to consider privatization of MFH in order to provide modern, efficient housing for military personnel and their dependents. Because of limited space on Maxwell AFB for MFH construction and considering the deficit of 14 units, Maxwell AFB is also considering acquisition of Riverside Heights, an adjacent property currently owned by the Montgomery Housing Authority and used for public housing. This area could provide additional space for MFH construction.

2.2 DESCRIPTION OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, the Air Force would retain all 794 MFH units at Maxwell AFB and would not acquire Riverside Heights. The status quo of maintenance and repair would continue, but no new construction or whole-house renovation would occur. The 14 deficit units would not be constructed; therefore, Maxwell AFB would continue to have fewer MFH units

than the 808 MFH units required. MFH at Maxwell AFB would continue to deteriorate and military families would be placed in inadequate housing.

The following paragraphs provide an overview of each MFH area, and Table 2-1 provides a summary of the number of units, bedrooms, and average square footage of the MFH units for each pay grade. Please see Figures 1-3 and 1-4 for the location of each housing area on the installation.

Table 2-1 Summary of Existing Military Family Housing, No Action

Grade	Units	Average Area per Unit (sq ft)	Number of Bedrooms	Total Area (sq ft)
07+	6	4,228	4	25,368
06	28	3,636	3	101,808
06	65	2,763	4	179,595
04-05	13	1,388	2	18,044
04-05	139	1,561	3	216,979
04-05	55	1,602	4	88,110
01-03	21	1,388	2	29,148
01-03	31	1,583	3	49,073
01-03	14	1,549	4	21,686
E9	3	1,773	3	5,319
E9	4	1,961	4	7,844
E7-E8	51	1,435	3	73,185
E7-E8	54	1,546	4	83,484
E1-E6	125	1,358	2	169,750
E1-E6	165	1,658	3	273,570
E1-E6	20	1,799	4	35,980
Total	**794**	**N/A**	**N/A**	**1,378,943**

Notes:
sq ft = square feet N/A = not applicable

2.2.1 Existing Housing at Maxwell AFB – Main Base

500 Area. The 500 Area housing accommodates up to 478 persons (116 families), based on one bedroom for the military member and spouse and one bedroom per other family member. Units consist of Row Quarters constructed in 1941 and California-style units constructed in 1975. The Row Quarters, although associated with the expansion of the installation during World War II, do not retain their architectural integrity and are, therefore, considered ineligible for inclusion in the National Register of Historic Places (NRHP). The California-style units are less than 50 years in age and do not meet Criteria Consideration G: Properties that Have Achieved Significance within the Past Fifty Years.

600/700 Area. The 600/700 Area, also known as the NCO quarters, accommodates up to 295 persons (77 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The 600/700 Area housing consists of bungalows and duplexes (built in 1934) arranged in three distinct clusters in the historic core of Maxwell AFB. Two clusters of duplexes form a circular arrangement backing onto a courtyard. The third cluster (the 600 Area) consists of all 13 bungalows and 14 of the duplexes arranged in three

concentric arcs. The units are slightly set back from the streets with large pines and sycamores located in the front lawns. The 600/700 Area is considered eligible for inclusion in the NRHP.

700 Row Area. The 700 Row housing accommodates up to 48 persons (12 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The 700 Row Area consists of Row Quarters, constructed in 1942. Although associated with the expansion of the installation during World War II, these structures do not retain their architectural integrity and are, therefore, considered ineligible for inclusion in the NRHP.

New Area. The New Area housing accommodates up to 305 persons (83 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The New Area consists of newly constructed units built in 1996 and 2000.

No Hundred Area. The No Hundred Area accommodates up to 293 persons (75 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The No Hundred Area consists of Row Quarters, constructed in 1942. The No Hundred Area buildings, although associated with the expansion of the installation during World War II, do not retain their architectural integrity and are, therefore, considered ineligible for inclusion in the NRHP.

Senior Officers Quarters Area. The SOQ Area accommodates up to 422 persons (99 families), based on one bedroom for the military member and spouse and one bedroom per other family member. SOQ housing is composed of 99 houses and 51 garages. The SOQ Area consists of French Provincial units constructed from 1932 to 1935 and is listed on the NRHP as a Historic District.

Juniper Area. The Juniper Area accommodates up to 32 persons (8 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The Juniper Area consists of eight California style, three-bedroom units that were constructed in 1975.

2.2.2 Existing Housing at Maxwell AFB – Gunter Annex

Gunter New Area. The Gunter New Area housing accommodates 501 persons (131 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The Gunter New Area housing was completed in 2001.

1600 Area. The 1600 Area Gunter Annex housing accommodates up to 764 persons (170 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The 1600 Area consists of California-style housing and was constructed in 1975.

300 Row Area. The 300 Row housing, built in 1942, accommodates up to 71 persons (23 families), based on one bedroom for the military member and spouse and one bedroom per other family member. The 300 Row Area buildings, although associated with the expansion of the installation during World War II, do not retain their architectural integrity and are, therefore, considered ineligible for inclusion in the NRHP.

2.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Various combinations of demolition, construction, and renovation were considered when developing alternatives. The Proposed Action, as described below, is the minimum amount of MFH demolition, construction, and renovation that the Air Force would allow a contractor to perform on Maxwell AFB in order to meet the purpose and need for the project.

Maxwell AFB originally planned to retain and manage several housing areas on the Main Base, including the NRHP listed homes. These units were not originally eligible for privatization because they were not severable from the base. Because the requirement for severability was removed, this alternative is no longer viable due to lack of MILCON funding to perform the necessary improvements.

Total demolition of all MFH at Maxwell AFB (Main Base and Gunter Annex) was considered but eliminated from consideration since the SOQ Area on Maxwell AFB (Main Base) is listed on the NRHP as a Historic District and the 600/700 Area is considered eligible for inclusion in the NRHP.

The MFH privatization contractor could propose an unlimited number of variations of demolition, reconstruction, and renovation on Maxwell AFB as long as its proposal fits the requirements as described under the proposed and alternative actions identified below.

The alternatives described below capture the range of effects that could occur as a result of privatization, while providing the most flexibility to the privatization contractor. Therefore, other combinations of demolition, construction, and renovation were eliminated from further consideration.

2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

The Air Force proposes to privatize MFH at Maxwell AFB by entering into a real estate transaction with a private developer to plan, design, develop, demolish, construct, renovate, replace, own, operate, maintain, and manage the MFH for military personnel for a period of 50 years. Housing proposed for privatization includes all of the housing areas on the Main Base and Gunter Annex (see Figures 1-3 and 1-4). The Proposed Action would also include acquisition of vacant land at Riverside Heights.

Riverside Heights is currently owned by the Montgomery Housing Authority and used for public housing. The public housing units were constructed in 1937 and 1941, and have received no major improvements since that time. In order to provide funding for new public housing for the families at Riverside Heights, the Montgomery Housing Authority is considering selling the property to the City of Montgomery; however, no families would be moved from Riverside Heights until other housing is available for them. The Air Force would then acquire the vacant property from the City of Montgomery either through a land swap or no cost conveyance. All of the buildings currently located at Riverside Heights (with the exception of the Central Office building, which is a city landmark and would be retained and reused for Air Force purposes) would be demolished prior to Air Force acquisition of this tract.

Overall, privatization would include conveyance of 794 MFH units to a private developer for a period of 50 years beginning in FY2006. The government would retain ownership of the underlying land and lease it to the private developer. The private developer would demolish 296 units and construct 310 new units, for a total of 808 units at project completion. New construction would occur on the Main Base, Gunter Annex, and on vacant land at Riverside Heights. Military families would pay the developer the Basic Allowance for Housing (BAH) to live in on-base housing.

The goal of the Proposed Action is to achieve the whole-house standard, conduct proper maintenance and repair, and renovate all 808 units again later in the program. The scope of renovations required to meet the whole-house standard includes roofing; siding; kitchen modernization; utilities upgrades; some floor space addition; flooring; bathroom modernization; heating, ventilation, and air conditioning (HVAC) duct insulation; drywall replacement (including asbestos mud disposal); interior painting; and related work.

Table 2-2 summarizes activities included under the Proposed Action, and Table 2-3 summarizes the number of bedrooms and average square footage per unit, post project completion. The tables are followed by sections describing the details of the proposed demolition, construction, and renovation activities.

Table 2-2 Summary of Planned Military Family Housing Replacement and Renovation, Proposed Action

Location	Fiscal Year	Existing Units	Units Retained As Is	Units Demo.	Area (sq ft) Demo.	Units Constr.	Area (sq ft) Constr.	Units Whole-House Renov.	Area (sq ft) Whole-House Renov.[1]	Units Minor Renov.[2]	Total Units Post Constr.
Maxwell AFB Main Base											
500 Area	08	116	0	116	192,672	74	149,540	0	0	0	74
600/700 Area	08	77	57	0	0	0	0	0	0	20	77
700 Row	06	12	0	12	20,284	0	0	0	0	0	0
New Area	06	83	0	0	0	0	0	0	0	83	83
No Hundred Area	07	75	0	75	120,736	21	42,020	0	0	0	21
SOQ	07	99	50	0	0	0	0	49	0	0	99
Juniper	09	8	0	0	0	0	0	8	5,000	0	8
Maxwell AFB Gunter Annex											
Gunter New	09	131	0	0	0	0	0	0	0	131	131
1600 Area	06	170	0	70	104,322	70	147,200	100	40,000	0	170
300 Row	07	23	0	23	28,093	31	60,450	0	0	0	31
Riverside Heights											
Tract of land	09	0	0	0	0	114	238,110	0	0	0	114
Totals	**N/A**	**794**	**107**	**296**	**466,107**	**310**	**637,320**	**157**	**45,000**	**234**	**808**

[1] square footage added as a result of renovations
[2] minor renovations do not require square foot additions

Notes:

Constr. = construction Renov. = Renovation
Demo. = demolition sq ft = square feet
N/A = Not Applicable

Table 2-3 Summary of Number of Bedrooms and Average Square Footage per Unit, Proposed Action – Post Construction

Grade	Units	Average Area per Unit (sq ft)	Number of Bedrooms	Total Area (sq ft)
07+	6	3,300	4	19,800
06	36	2,520	4	90,720
04-05	239	2,020	3	482,780
04-05	59	2,310	4	136,290
01-03	35	1,340	2	46,900
01-03	12	1,950	3	23,400
01-03	12	2,150	4	25,800
E9	8	2,020	3	16,160
E9	4	2,310	4	9,240
E7-E8	62	1,950	3	120,900
E7-E8	26	2,150	4	55,900
E1-E6	174	1,340	2	233,160
E1-E6	66	1,630	3	107,580
E1-E6	69	1,950	4	134,550
Total	**808**	**N/A**	**N/A**	**1,503,180**

Notes:
sq ft = square feet N/A = not applicable

2.4.1 Demolition

As noted in Table 2-2, MFH units in the 500 Area, 700 Row, and No Hundred Area on the Main Base, and the 1600 Area and 300 Row on Gunter Annex would be demolished as part of the Proposed Action. Demolition activities would include the removal of the structures as well as impervious cover for some interior roads, sidewalks, driveways, and other features in the housing areas. Trees would be preserved wherever feasible.

2.4.2 Construction

As noted in Table 2-2, construction of new MFH units is planned for two areas on the Main Base (500 Area and No Hundred Area), two areas on the Gunter Annex (1600 Area, and 300 Row) and on Riverside Heights. Replacement units would be constructed in the same area on-base in which the existing units are located, but the layout and spacing could be different. Layout and spacing of units constructed on Maxwell AFB and Riverside Heights would be at the contractor's discretion, subject to Air Force approval. The new units would have a modern kitchen, living room, family room, bedroom, and bath configurations with ample interior and exterior storage. The living area would be increased to meet minimum space authorizations in accordance with current DoD and Air Force housing guidance (USAF 2002a). Neighborhood enhancements would include open spaces, play areas, and pedestrian walkways.

Existing infrastructure would be retained where feasible. However, streets, curbs, sidewalks, and utility system connections would be modified as necessary. Storm sewer drains are undersized and would be upgraded. Grading, surface improvements, and landscaping would be

accomplished where appropriate, and recreational spaces would be constructed. In addition, a perimeter fence would be installed around newly acquired Riverside Heights.

2.4.3 Renovation

Renovation activities are planned in 4 areas on the Main Base (600/700 Area, New Area, SOQ, and Juniper) and two areas on the Gunter Annex (Gunter New Area and 1600 Area). The following paragraphs provide a summary of renovation activities planned under the Proposed Action.

Renovation of 600/700 Area. Minor renovations of 600/700 Area include converting 20 carports to enclosed garages. Maintenance and repair and upgrading would be conducted in accordance with the guidelines provided in the Maxwell AFB Cultural Resources Management Plan (Harvey and Poplin 1999) and the Secretary of the Interior's Guidelines for Rehabilitation. Renovations to the 600/700 Area housing require SHPO approval prior to any activity and would be conducted according to the Programmatic Agreement prepared for this action.

Conversion of Carports to Enclosed Garages and Painting with Mildew-Retardant Paint in New Area (Main Base). All 83 units located in the New Area require carports be converted to enclosed garages and the exteriors of all units be painted with mildew-retardant paint.

Renovation of SOQ Area. Renovations to SOQ Area housing require SHPO approval prior to any activity because the housing is in the Historic District. Renovation would be limited to the interior and all renovation, maintenance and repair, and upgrading would be conducted in accordance with the guidelines provided in the Maxwell AFB Cultural Resources Management Plan (Harvey and Poplin 1999) and the Secretary of the Interior's Guidelines for Rehabilitation. Renovations would also be conducted according to the Programmatic Agreement prepared for this action. Typical renovations in housing include, as necessary:

- Repairs to roofs, siding, and foundations;
- Refinish or replace wood floors;
- Some floor space addition;
- Major kitchen renovations to improve counter layout and lighting;
- Bathroom modernization;
- HVAC duct installation;
- Utility upgrades;
- Drywall replacement, including asbestos mud disposal;
- Patching and painting of interior plaster walls.

Addition of Garages to Juniper Area. Garages, as well as additional square footage for living space, would be added to all eight units in the Juniper Area.

Painting with Mildew-Retardant Paint in the Gunter New Area. The exteriors of all 131 units in the Gunter New Area would be painted with mildew-retardant paint.

Addition of Garages and Conversion of Carports to Garages in the 1600 Area of Gunter Annex. In the 1600 Area of Gunter Annex, 78 units would have carports converted to enclosed garages

and 22 units would have the addition of enclosed garages. Additional square footage for living space would be added to all units.

2.4.4 Occupancy During Demolition/Construction/Renovation

Depending upon the availability of housing units on the installation, families would be required to temporarily relocate during replacement and whole-house renovation. Wherever possible, these families would be housed in other MFH units at Maxwell AFB. Families that cannot be housed on the installation would be required to move off-base during replacement and whole-house renovation.

2.5 DESCRIPTION OF OTHER ACTION ALTERNATIVES

2.5.1 Alternative 1 - Demolition of All MFH in the 500 Area, 700 Area, No-Hundred Area, and 300 Row, and Demolition of Some MFH in the 1600 Area

Under Alternative 1, the Air Force would convey 794 MFH units to a private developer for a period of 50 years beginning in FY2006. The government would retain ownership of the underlying land and lease it to the private developer. The private developer would demolish 296 units and construct 310 new units, for a total of 808 units at project completion. The units would be constructed in the same general location as the original MFH units; however, the number of units per area and their spacing may be different. This alternative does not include acquisition of Riverside Heights.

This action differs from the Proposed Action in that Riverside Heights would not be acquired; all new construction would occur in existing MFH areas on Maxwell AFB. As a result, the density of houses on Maxwell AFB would increase with resulting decreases in open space and the size of play areas. Specific demolition and renovation activities would be the same as those described under the Proposed Action. Likewise, occupancy during project activities would be as described under the Proposed Action except that a larger number of families would likely be required to move off-base during replacement and whole-house renovation. Table 2-4 outlines the demolition and construction activities associated with Alternative 1 and Table 2-5 summarizes the number of bedrooms and average square footage per unit, post project completion.

2.5.1.1 Construction

As noted in Table 2-4, construction of new MFH units is planned for three areas on the Main Base (500 Area, 700 Row, and No Hundred Area) and on two areas on the Gunter Annex (1600 Area, and 300 Row). Replacement units would be constructed in the same area on-base in which the existing units are located, but the layout and spacing could be different. As described under the Proposed Action, the new units would have a modern kitchen, living room, family room, bedroom, and bath configurations with ample interior and exterior storage. The living area would be increased to meet minimum space authorizations in accordance with current DoD and Air Force housing guidance (USAF 2002a). Neighborhood enhancements would include open spaces, play areas, and pedestrian walkways.

Table 2-4 Summary of Planned Military Family Housing Replacement and Renovation, Alternative 1

Location	Fiscal Year	Existing Units	Units Retained As Is	Units Demo.	Area (sq ft) Demo.	Units Constr.	Area (sq ft) Constr.	Units Whole-House Renov.	Area (sq ft) Whole-House Renov.[1]	Units Minor Renov.[2]	Total Units Post Constr.
Maxwell AFB Main Base											
500 Area	08	116	0	116	192,672	125	253,320	0	0	0	125
600/700 Area	08	77	57	0	0	0	0	0	0	20	77
700 Row	06	12	0	12	20,284	4	8,660	0	0	0	4
New Area	10	83	0	0	0	0	0	0	0	83	83
No Hundred Area	07	75	0	75	120,736	80	167,690	0	0	0	80
SOQ	09	99	50	0	0	0	0	49	0	0	99
Juniper	09	8	0	0	0	0	0	8	5,000	0	8
Maxwell AFB Gunter Annex											
Gunter New	10	131	0	0	0	0	0	0	0	131	131
1600 Area	06	170	0	70	104,322	70	147,200	100	40,000	0	170
300 Row	07	23	0	23	28,093	31	61,590	0	0	0	31
Totals	**N/A**	**794**	**107**	**296**	**466,107**	**310**	**638,460**	**157**	**45,000**	**234**	**808**

[1] square footage added as a result of renovations
[2] minor renovations do not require square foot additions

Notes:

Constr. = construction
Demo. = demolition
N/A = Not Applicable
Renov. = Renovation
sq ft = square feet

Table 2-5 Summary of Number of Bedrooms and Average Square Footage per Unit, Alternative 1 – Post Construction

Grade	Units	Average Area per Unit (sq ft)	Number of Bedrooms	Total Area (sq ft)
07+	6	3,300	4	19,800
06	36	2,520	4	90,720
04-05	239	2,020	3	482,780
04-05	59	2,310	4	136,290
01-03	35	1,340	2	46,900
01-03	12	1,950	3	23,400
01-03	12	2,150	4	25,800
E9	8	2,020	3	16,160
E9	4	2,310	4	9,240
E7-E8	62	1,950	3	120,900
E7-E8	26	2,150	4	55,900
E1-E6	174	1,340	2	233,160
E1-E6	66	1,630	3	107,580
E1-E6	69	1,950	4	134,550
Total	**808**	**N/A**	**N/A**	**1,503,180**

Notes:
sq ft = square feet N/A = not applicable

2.5.2 Alternative 2 – Demolition of All MFH Except the SOQ Area, Juniper Area, and 600/700 Area

Under Alternative 2, the Air Force would convey 794 MFH units to a private developer for a period of 50 years beginning in FY2006. The government would retain ownership of the underlying land and lease it to a private developer. The private developer would demolish 610 units, and construct 624 new units, for a total of 808 units at project completion. The units would be constructed in the same general location as the original MFH units; however, the number of units per area and their spacing may be different. This alternative does not include acquisition of Riverside Heights.

This alternative differs from the Proposed Action and Alternative 1 in that, with the exception of the SOQ Area, Juniper Area, and the 600/700 Area, all MFH would be demolished. This alternative also proposes more new construction and less renovation of existing units, without acquiring any Riverside Heights land. Occupancy during project activities would be as described under the Proposed Action and Alternative 1 except that a larger number of families would likely be required to move off-base during replacement and whole-house renovation.

Table 2-6 summarizes activities included under Alternative 2, and Table 2-7 summarizes the number of bedrooms and average square footage per unit, post project completion. The tables are followed by sections describing the details of the proposed demolition, construction, and renovation activities.

Table 2-6 Summary of Planned Military Family Housing Replacement and Renovation, Alternative 2

Location	Fiscal Year	Existing Units	Units Retained As Is	Units Demo.	Area (sq ft) Demo.	Units Constr.	Area (sq ft) Constr.	Units Whole-House Renov.	Area (sq ft) Whole-House Renov.[1]	Units Minor Renov.[2]	Total Units Post Constr.
Maxwell AFB Main Base											
500 Area	08	116	0	116	192,672	96	194,180	0	0	0	96
600/700 Area	08	77	57	0	0	0	0	0	0	20	77
700 Row	06	12	0	12	20,284	9	12,060	0	0	0	9
New Area	10	83	0	83	124,441	67	106,250	0	0	0	67
No Hundred Area	07	75	0	75	120,736	59	124,110	0	0	0	59
SOQ	09	99	50	0	0	0	0	49	0	0	99
Juniper	09	8	0	0	0	0	0	8	5,000	0	8
Maxwell AFB Gunter Annex											
Gunter New	10	131	0	131	229,047	157	251,450	0	0	0	157
1600 Area	06	170	0	170	253,380	216	423,360	0	0	0	216
300 Row	07	23	0	23	28,093	20	26,800	0	0	0	20
Totals	**N/A**	**794**	**107**	**610**	**968,653**	**624**	**1,138,210**	**57**	**5,000**	**20**	**808**

[1] square footage added as a result of renovations
[2] minor renovations do not require square footage additions

Notes:

Constr. = construction Renov. = Renovation
Demo. = demolition sq ft = square feet
N/A = Not Applicable

Table 2-7 Summary of Number of Bedrooms and Average Square Footage per Unit, Alternative 2 – Post Construction

Grade	Units	Average Area per Unit (sq ft)	Number of Bedrooms	Total Area (sq ft)
07+	6	3,300	4	19,800
06	36	2,520	4	90,720
04-05	239	2,020	3	482,780
04-05	59	2,310	4	136,290
01-03	35	1,340	2	46,900
01-03	12	1,950	3	23,400
01-03	12	2,150	4	25,800
E9	8	2,020	3	16,160
E9	4	2,310	4	9,240
E7-E8	62	1,950	3	120,900
E7-E8	26	2,150	4	55,900
E1-E6	174	1,340	2	233,160
E1-E6	66	1,630	3	107,580
E1-E6	69	1,950	4	134,550
Total	**808**	**N/A**	**N/A**	**1,503,180**

Notes:

sq ft = square feet N/A = not applicable

2.5.2.1 Demolition

As noted in Table 2-6, MFH units in the 500 Area, 700 Row, New Area, and No Hundred Area on the Main Base; and the New Area, 1600 Area, and 300 Row on Gunter Annex would be demolished as part of Alternative 2. As with the Proposed Action and Alternative 1, demolition activities would include the removal of the structures as well as impervious cover for some interior roads, sidewalks, driveways, and other features in the housing areas. Trees would be preserved wherever feasible or replaced in accordance with Air Force Policy and Maxwell AFB Tree City Ordinance.

2.5.2.2 Construction

As noted in Table 2-6, construction of new MFH units is planned for four areas on the Main Base (500 Area, 700 Row, New Area, and No Hundred Area) and all three areas on the Gunter Annex (1600 Area, 300 Row, and Gunter New Area). Replacement units would be constructed in the same area in which the existing units are located, but the layout and spacing could be different. As described under the Proposed Action and Alternative 1, the new units would have a modern kitchen, living room, family room, bedroom, and bath configuration with ample interior and exterior storage. The living area would be increased to meet minimum space requirements in accordance with current DoD and Air Force housing guidance. Neighborhood enhancements would include open spaces, play areas, and pedestrian walkways.

Existing infrastructure would be retained where feasible. However, streets, curbs, sidewalks, and utility system connections would be modified as necessary. Storm sewer drains are undersized and would be upgraded. Grading, surface improvements, and landscaping would be accomplished where appropriate, and recreational spaces would be constructed.

2.5.2.3 Renovation

Renovation activities are planned in three areas on the Main Base (600/700 Area, SOQ Area and Juniper Area) and would be the same as those described for those areas under the Proposed Action and Alternative 1.

2.5.3 Alternative 3 – Demolition of All MFH Except the SOQ Area, Juniper Area, and 600/700 Area; Acquisition of Riverside Heights and Demolition of Existing Units

Under Alternative 3, the Air Force would acquire Riverside Heights land and all associated structures on those lands. As described under the Proposed Action, Riverside Heights is currently owned by the Montgomery Housing Authority and used for public housing. The public housing units were constructed in 1937 and 1941, and have received no major improvements since that time. In order to provide funding for new public housing for the families at Riverside Heights, the Montgomery Housing Authority is considering selling the property to the City of Montgomery; however, no families would be moved from Riverside Heights until other housing is available for them. The Air Force would then acquire the property from the City of Montgomery either through a land swap or no cost conveyance. Acquisition of Riverside Heights under this alternative is conditioned on the fact that, with the exception of the Riverside Heights Central Office, the City has coordinated with the SHPO, and no buildings included in the acquisition are determined eligible for the NRHP. As such, it is assumed that the buildings can be demolished without incurring an adverse effect under the NRHP.

The Air Force would convey 794 MFH units, 482 Riverside Heights housing units, 5 administration buildings on Riverside Heights, and Peterson Elementary School to a private developer for a period of 50 years beginning in FY2006. The government would retain ownership of the underlying land and lease it to a private developer. The private developer would demolish 1,098 housing units and structures (including Peterson Elementary School), and construct 773 new housing units. The units would be constructed in the same general location as the original MFH units on Maxwell AFB and the housing units on Riverside Heights; however, the number of units per area and their spacing may be different. The Central Office located on Riverside Heights is a city landmark and would be retained and reused for Air Force purposes.

This alternative differs from the Proposed Action, Alternative 1, and Alternative 2 in that, with the exception of the SOQ Area, Juniper Area, and the 600/700 Area, all MFH and all existing structures on the Riverside Heights Public Housing Area would be demolished (with the exception of the Central Office) and the land retained. This alternative proposes a greater amount of new construction than the other alternatives, resulting in a surplus of 149 units (957 total units compared with the Air Force requirement of 808 units). Occupancy during project activities would be as described under Alternative 2.

Table 2-8 summarizes activities included under Alternative 3, and Table 2-9 summarizes the number of bedrooms and average square footage per unit, post project completion. The tables are followed by sections describing the details of the proposed demolition, construction, and renovation activities.

Table 2-8 Summary of Planned Military Family Housing Replacement and Renovation, Alternative 3

Location	Fiscal Year	Existing Units	Units Retained As Is	Units Demo.	Area (sq ft) Demo.	Units Constr.	Area (sq ft) Constr.	Units Whole-House Renov.	Area (sq ft) Whole-House Renov.[1]	Units Minor Renov.[2]	Total Units Post Constr.
Maxwell AFB Main Base											
500 Area	08	116	0	116	192,672	96	194,180	0	0	0	96
600/700 Area	08	77	57	0	0	0	0	0	0	20	77
700 Row	06	12	0	12	20,284	0	0	0	0	0	0
New Area	10	83	0	83	124,441	67	106,250	0	0	0	67
No Hundred Area	07	75	0	75	120,736	0	0	0	0	0	0
SOQ	09	99	50	0	0	0	0	49	0	0	99
Juniper	09	8	0	0	0	0	0	8	5,000	0	8
Maxwell AFB Gunter Annex											
Gunter New	10	131	0	131	229,047	157	245,900	0	0	0	157
1600 Area	06	170	0	170	253,380	216	423,360	0	0	0	216
300 Row	07	23	0	23	28,093	20	26,800	0	0	0	20
Riverside Heights											
Tract of land	10	488	0	488	520,863	217	434,440	0	0	0	217
Totals	**N/A**	**1,282**	**107**	**1,098**	**1,489,516**	**773**	**1,430,930**	**57**	**5,000**	**20**	**957**

[1] square footage added as a result of renovations
[2] minor renovations do not require square footage additions
[3] This includes 482 houses, a training facility building, a Community Center, 3 Maintenance Buildings, and the Peterson School building.

Notes:

Constr. = construction Renov. = Renovation
Demo. = demolition sq ft = square feet
N/A = Not Applicable

Table 2-9 Summary of Number of Bedrooms and Average Square Footage per Unit, Alternative 3 – Post Construction

Grade	Units	Average Area per Unit (sq ft)	Number of Bedrooms	Total Area (sq ft)
07+	6	3,300	4	19,800
06	36	2,520	4	90,720
04-05	237	2,020	3	478,740
04-05	73	2,310	4	168,630
01-03	35	1,340	2	46,900
01-03	62	1,950	3	120,900
01-03	37	2,150	4	79,550
E9	10	2,020	3	20,200
E9	8	2,310	4	18,480
E7-E8	71	1,950	3	138,450
E7-E8	38	2,150	4	81,700
E1-E6	174	1,340	2	233,160
E1-E6	86	1,630	3	140,180
E1-E6	84	1,950	4	163,800
Total	**957**	**N/A**	**N/A**	**1,801,210**

Notes:
sq ft = square feet N/A = not applicable

2.5.3.1 Demolition

As noted in Table 2-8, MFH units in the 500 Area, 700 Row, New Area, and No Hundred Area on the Main Base; the 1600 Area, New Area, and 300 Row on Gunter Annex; and all existing structures on Riverside Heights (with the exception of the historic Central Office) would be demolished as part of Alternative 3. Demolition activities would include the removal of the structures as well as impervious cover for some interior roads, sidewalks, driveways, and other features in the housing areas. Trees would be preserved wherever feasible.

2.5.3.2 Construction

As noted in Table 2-8, construction of new MFH units is planned for two areas on the Main Base (500 Area and New Area) and all three areas on the Gunter Annex (1600 Area, 300 Row, and Gunter New Area). New construction is also planned on Riverside Heights. Replacement units on-base would be constructed in the same area in which the existing units are located, but the layout and spacing could be different. Layout and spacing of units constructed at Riverside Heights would also be at the contractor's discretion. As with the Proposed Action and Alternatives 1 and 2, the new units would have a modern kitchen, living room, family room, bedroom, and bath configurations with ample interior and exterior storage. The living area would be increased to meet minimum space authorizations in accordance with current DoD and Air Force housing guidance. Neighborhood enhancements would include open spaces, play areas, and pedestrian walkways.

Existing infrastructure would be retained where feasible. However, streets, curbs, and sidewalks, and utility system connections would be modified as necessary. Storm sewer drains are undersized and would be upgraded. Grading, surface improvements, and landscaping would be accomplished where appropriate, and recreational spaces would be constructed. In addition, a perimeter fence would be installed around the newly acquired Riverside Heights.

2.5.3.3 Renovation

Renovation activities are planned in three areas on the Main Base (600/700 Area, SOQ Area and Juniper Area) and would be the same as those described for those areas under the Proposed Action and Alternatives 1 and 2.

2.6 OTHER ACTIONS ANNOUNCED FOR MAXWELL AFB AND SURROUNDING COMMUNITY

This EA also considers the effects of cumulative impacts (40 CFR 1508.7) and concurrent actions (40 CFR 1508.25(1)), if any are applicable to the proposed or alternative actions. A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Other actions announced for Maxwell AFB that could occur during the same time period as the proposed or alternative actions include:

- Construction of Air Force Non Appropriated Funds Bowling Center, Gunter Annex, FY06;
- Construction of an Integrated Operational Support Facility, Gunter Annex, FY06;
- Fitness Center, Gunter Annex, FY09;
- Relocation of Bell Street Gate to provide better security;
- Squadron Officer College Lodging Phase 4, Maxwell Main Base, FY06;
- Day Street Shoppette, Maxwell Main Base, FY06; and
- Add/alter Library, Maxwell Main Base, FY06.

In addition, the Alabama Department of Transportation is planning several actions, including construction of a new exit ramp from Interstate 65 to Bell Street, and widening of the two I-65 bridges over the Alabama River. Following completion of the bridge work, I-65 will be widened from Catoma Creek to the Alabama River and I-85 will be widened from I-65 to Hall Street. Bell Street will also likely be widened to add an additional inbound lane to Maxwell AFB.

In an effort to provide adequate housing for families in Riverside Heights, the Montgomery Housing Authority is considering selling Riverside Heights to the City of Montgomery. Proceeds from the sale of the property would be used to construct new homes for Riverside Heights residents; however, families would not be moved from Riverside Heights until after other adequate housing is available.

The actions identified above are addressed from a cumulative perspective in this EA. The impacts of past actions are included in the baseline and, thus, considered in this EA.

2.7 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2-10 summarizes the impacts of the Proposed Action, Alternative 1, Alternative 2, Alternative 3, and the No Action Alternative.

2.8 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is the Proposed Action.

2.9 MITIGATION MEASURES

Table 2-11 presents mitigation measures and best management practices anticipated for impacts incurred under the Proposed Action, Alternative 1, Alternative 2, Alternative 3, and the No Action Alternative.

By definition, preparation of a Finding of No Significant Impact (FONSI) indicates that impacts associated with the proposed project are not significant. In cases where significant impacts are identified in the EA, but reduced below the level of significance through mitigation measures, a mitigated FONSI can be developed. Mitigation measures are those activities that, if implemented, reduce an environmental impact below the significance threshold. Mitigation measures must be implemented as described in the EA/FONSI.

Best management practices are activities that can reduce impacts to a particular resource. Best management practices are not required to achieve a FONSI; rather, they are practical means and measures used to reduce environmental effects. Implementation of best management practices is desired, but there is no requirement to implement as with migitation measures identified in a FONSI.

Table 2-10 Summary of Environmental Impacts

Resource	Proposed Action 808 MFH units post project completion. Includes Riverside Heights vacant land.	Alternative 1 808 MFH units post project completion. No acquisition of Riverside Heights.	Alternative 2 808 MFH units post project completion. Increased demolition and construction. No acquisition of Riverside Heights.	Alternative 3 957 MFH units post project completion. Maximum demolition and construction. Includes acquisition of Riverside Heights land and structures.	No Action Alternative Air Force retains all MFH units. Renovation and repair as funding allows.
Noise	Short-term increase in noise levels from remodeling, construction, and demolition activities. No long-term increase in noise levels.	Same as Proposed Action except that (1) there would be a slight increase in air emissions, and (2) Riverside Heights would not be acquired.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action.	No change.
Air Quality	Short-term increases in heavy equipment exhaust and fugitive dust emissions from remodeling, construction, and demolition activities. No long-term impacts.	Same as Proposed Action except that Riverside Heights would not be acquired.	Short-term emissions would be slightly greater than those from the Proposed Action and Alternative 1 due to increased demolition and construction activities. No long-term impacts.	Short-term emissions would be slightly greater than those from the Proposed Action and Alternatives 1 and 2 due to increased demolition and construction activities. No long-term impacts.	No change.
Water Resources	Short-term impacts to surface water quality, minimized through implementation of a Stormwater Pollution Prevention Plan (SWPPP). Shallow groundwater has been impacted; however, no impacts are expected due to the depth to groundwater.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action except that (1) Riverside Heights would not be acquired, and (2) the area would have increased ground disturbance associated with an increase in demolition activities.	Same as the Proposed Action except that the area would have increased ground disturbance associated with an increase in demolition activities. Demolition activities would be greater than all other alternatives.	No change.
Cultural Resources	Demolition would have no effect on historic properties. Renovation would affect historic properties, but by following Cultural Resources Management Plan, Secretary of Interior's Guidelines for Rehabilitation, and the Programmatic Agreement, these activities would have no adverse effect. Construction at Main Base and Gunter Annex would have no effect on historic or archaeological resources. Construction at Riverside Heights has potential to adversely affect archaeological resources. Potential adverse effect to be mitigated through development of sampling plan, and if necessary, an evaluation plan and mitigation or data recovery plan in consultation with the State Historic Preservation Officer (SHPO) and Indian Tribes that may attach religious or cultural importance to affected property.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action. It is assumed that all acquired structures, except the Central Office, on Riverside Heights are ineligible for the National Register of Historic Places.	Given existing funding limitations, historic buildings would continue to deteriorate from lack of necessary repairs.
Hazardous Materials and Wastes	Contractor would manage hazardous materials and wastes from construction/ renovation/demolition. In the event soils where pesticides were applied or impacted by lead-based paint are excavated, additional sampling and health screening may be required to determine worker safety, the potential exposure levels for the site, and to properly characterize the soil for hazardous constituents. Project activities would occur within Environmental Restoration Program (ERP) sites and Areas of Concern (AOCs) where shallow groundwater contamination has occurred; however, it is unlikely that shallow groundwater would be encountered.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action.	No change.

Resource	Proposed Action 808 MFH units post project completion. Includes Riverside Heights vacant land.	Alternative 1 808 MFH units post project completion. No acquisition of Riverside Heights.	Alternative 2 808 MFH units post project completion. Increased demolition and construction. No acquisition of Riverside Heights.	Alternative 3 957 MFH units post project completion. Maximum demolition and construction. Includes acquisition of Riverside Heights land and structures.	No Action Alternative Air Force retains all MFH units. Renovation and repair as funding allows.
Infrastructure and Utilities	Short-term increase in solid waste disposal. Short-term increase in traffic counts and potential transportation of heavy equipment/materials to adversely affect road surface conditions. Slight increase in installation potable water usage, wastewater generation, and natural gas consumption, but no regional change because population size would remain the same. Construction activities would require implementation of a SWPPP, which would minimize short-term increase in soil erosion and sediment loadings in stormwater runoff.	Same as Proposed Action except that (1) there would be a slight increase in solid waste generation and disposal, and (2) Riverside Heights would not be acquired.	Same as Proposed Action with the following exceptions. Riverside Heights would not be acquired. There would be more short-term solid waste generation and ground disturbance due to increased demolition activities. Increased construction and demolition traffic could more adversely affect road surfaces than the Proposed Action.	Same as Proposed Action with the following exceptions. There would be more short-term solid waste generation and ground disturbance compared to all other alternatives due to increased demolition activities. Increased construction and demolition traffic could more adversely affect road surfaces than all other alternatives.	No change.
Socioeconomic Resources	No change in population size. Positive impacts to housing and quality of life for military families. No change in education requirements. Short-term positive impacts to local economy during project activities.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action except that Riverside Heights would not be acquired and an increased number of families may be required to relocate off the installation during project activities.	Same as Proposed Action except that there would be a larger short-term positive impact to the local economy when compared to all other alternatives. An increased number of families may be required to relocate off the installation during project activities. Additional students would attend Maxwell Elementary School, within the capacity of school.	No change. MFH at Maxwell AFB would continue to deteriorate and minimum square footage requirements would not be met.
Environmental Justice	Short-term increase in air and noise emissions from remodeling, construction, and demolition activities. Emissions would attenuate rapidly with distance from the construction site and would be evenly distributed throughout the project area. No disproportionately high and adverse effects would occur to minority and low-income populations.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action except that Riverside Heights would not be acquired.	Same as Proposed Action.	No change.

Table 2-11 Summary of Mitigation and Best Management Practices

Resource	Mitigation and Best Management Practices
Noise	Best management practices include restricting the operation of extremely noisy equipment (e.g., brick cutters or jackhammers) before 9 a.m and after 5 p.m. Other practices to reduce construction-associated noise and disturbances include properly operating and maintained equipment (e.g., possessing mufflers, gaskets, and sharpened and lubricated blades), maximizing the distance of loud equipment from a residence, directing construction-related vehicles to use less noise-sensitive routes, fitting silencers to combustion engines, tightly fastening machinery covers or panels, isolating vibrating parts/damping, constructing sound barriers to reduce propagation, or shutting off/idling machinery between work periods.
Air Quality	Best management practices include watering the disturbed areas twice a day with approximately 3,500 gallons per acre per day to reduce total suspended particulate emissions by as much as 50 percent.
Water Resources	Impacts to surface water would be reduced through development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Best management practices identified in the SWPPP would reduce surface water impacts.
Cultural Resources	Adverse impacts to historic resources on Maxwell Air Force Base under the Proposed Action or any Alternatives are not expected, provided that the stipulations under the Programmatic Agreement are met. Therefore, no further mitigative actions would be required. Impacts to archaeological properties at Riverside Heights are possible under the Proposed Action and Alternative 3. To mitigate potential adverse effects on archaeological deposits, an archaeological sampling plan and, if necessary, an evaluation plan and a mitigation plan would be developed in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the affected property.
Hazardous Materials and Wastes	Hazardous materials and wastes would be managed according to installation, state, and federal regulations. No mitigation or best management practices are necessary.
Infrastructure and Utilities	Impacts to drainage would be minimized through development and implementation of a SWPPP. Best management practices identified in the SWPPP would reduce drainage impacts.
Socioeconomic Resources	No mitigation or best management practices are necessary.
Environmental Justice	No disproportionate adverse effects to Environmental Justice communities are expected. Best management practices associated with noise, air quality, surface water, and drainage impacts are included above. If archaeological resources are found at the construction sites, an archaeological sampling plan and, if necessary, an evaluation plan and a mitigation plan would be developed in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the property.

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Chapter 3

Affected Environment

CHAPTER 3
AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementation of the Proposed Action or alternatives. Section 3.3 focuses on the conditions at Maxwell AFB, Riverside Heights and, where applicable, in the surrounding community. The baseline conditions presented in this chapter are described to the level of detail necessary to support analysis of potential impacts presented in Chapter 4, "Environmental Consequences."

3.2 INSTALLATION LOCATION, HISTORY, AND CURRENT MISSION

Maxwell AFB is a United States Air Force education and training base under the AETC, and headquarters to the 42 ABW and Air University (AU). Maxwell AFB's primary mission is to provide support to AU, the professional military education center of the Air Force (USAF 2000). Maxwell AFB is located in Montgomery County, within the city limits of Montgomery, Alabama, and comprises the Main Base and Gunter Annex (Figures 1-1 and 1-2). Gunter Annex was formerly Gunter AFB until it was consolidated with Maxwell AFB in 1991. The Main Base includes approximately 2,477 acres, and Gunter Annex, located approximately 5 miles east of the Main Base, includes approximately 372 acres.

Portions of the property composing Maxwell AFB have been associated with aviation since the beginning of heavier-than-air powered flight. Orville Wright established Wright Field as a flying school in the spring of 1910 and, in 1918, the United States purchased Wright Field as part of a 302-acre parcel to be used as a repair depot for air training aircraft (USAF 1986). In 1946, AU was established, and Maxwell AFB became the center for Air Force professional military education.

The host unit for Maxwell AFB and Gunter Annex is 42 ABW, which is responsible for providing base-level services and support. Tenant organizations at Maxwell AFB are the United States Air Force Historical Research Agency, the Community College of the Air Force, the Headquarters Air Force Reserve Officer Training Corps, the Maxwell Federal Prison Camp, and several other schools for education, graduate education, and professional continuing education for officers, noncommissioned officers, and civilians to prepare them for command, staff, leadership, and management responsibilities. In addition, AU is responsible for research in designated fields of aerospace, education, leadership, and management, and contributes to the development and testing of Air Force doctrine, concepts, and strategy (USAF 1994).

In the mid-1990s, three training programs were moved from Keesler AFB to Maxwell AFB and one was moved from Lackland AFB to Maxwell AFB. These programs were the First Sergeant Academy (Keesler), the Chapel Service Support School (Keesler), the Legal Services Specialist School (Keesler), and the Officer Training Squadron (Lackland).

Maxwell AFB is an operational airfield, serving four C-21 aircraft operated by the 54th Airlift Wing (AW) Flight and eight C-130 aircraft operated by the 908 AW.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.3.1 Noise

3.3.1.1 Definition of Resource Area

Noise is sound that, if loud enough, can induce hearing loss and can be undesirable if it annoys people due to interference with ordinary daily activities, such as communication or sleep. A person's reaction to noise varies according to the duration, type and characteristics of the source, distance between the source and receiver, receiver's sensitivity, background noise level, and time of day. When describing sound levels in relation to humans, a weighted sound level is used to characterize the sound levels to which the human ear responds especially well by emphasizing mid-frequencies and de-emphasizing the low and high frequencies. Sound levels weighted in this manner are referred to as A-weighted decibels (dBA). Sound levels are further described using metrics that reflect the intensity of the sound pressure at a given moment in time or the average exposure to sound over an extended period of time.

The measure of the maximum sound pressure at a given instant and known distance is referred to as sound pressure level (SPL). For example, an aircraft with jet engines overflying at 100 ft typically would have a measured peak SPL of 120 dBA. However, that peak sound level falls fairly rapidly as the aircraft moves away from the receiver. Therefore, to describe the effects from repetitive overflights, a measure is necessary that incorporates the number of overflights and the intensity of the noise produced. One of the most common ways to describe ambient noise exposure over an extended period of time is as a day-night average sound level (DNL) measured in decibels (dB). This is a cumulative metric that accounts for the total sound energy occurring over a 24-hour period with a 10 dB penalty added to those noises occurring between the hours of 10 p.m. and 7 a.m., when most people sleep and are most sensitive to noise.

To account for these varied reactions to sound and based on scientific studies confirming its validity, the federal government has selected the DNL as its common metric to describe noise exposure when describing and assessing aircraft noise. The DNL is used by the U.S. Department of Housing and Urban Development (HUD), the Federal Aviation Administration (FAA), the U.S. Environmental Protection Agency (USEPA), and the Department of Defense (DoD). Within the DoD, a program that assesses noise related specifically to airfield operations has been developed and adopted by its services, including the Air Force.

The Air Force Air Installation Compatible Use Zone (AICUZ) program predicts noise exposure by modeling aircraft operations and employing four bands of noise exposure: 65 to 69 dBA DNL, 70 to 74 dBA DNL, 75 to 79 dBA DNL, and 80 dBA DNL or more (DoD 1977; USAF 1998). Within these bands of noise exposure, certain land uses are considered acceptable or unacceptable. Specific noise exposure contours are developed for each Air Force installation that has flying activities; these contours are released to the surrounding jurisdictions to guide their land use planning or are used to guide facilities planning on Air Force bases. Areas below the 65 dBA DNL are typically categorized as compatible for residential use. The Air Force's

policy has been to implement, if feasible, noise level reduction (NLR) measures for on-base residential and public use buildings with all new buildings being designed and constructed to comply with the appropriate NLR standards (USAF 1978).

Apart from noise associated with aircraft operations, federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise.

Hearing Loss. The potential for permanent hearing loss arises from direct exposure to noise on a regular, continuing long-term basis (16 hours a day for 40 years) to levels above 75 dBA DNL. Based on a USEPA report (1974), hearing loss is not expected in people exposed to 75 dBA DNL or less. The Federal Interagency Committee on Urban Noise states that hearing loss due to noise: 1) may begin to occur in people exposed to long-term noise at or above 75 dBA DNL; 2) will not likely occur in people exposed to noise between 70 and 75 dBA DNL; and 3) will not occur in people exposed to noise less than 70 dBA DNL (FICON 1992).

Noise Interference. Elevated noise levels can potentially interfere with speech, cause annoyance, or disturb sleep. Annoyance resulting from noise exposure is typically measured via community surveys where the level of tolerance can vary greatly among individuals (USEPA 1974). It is estimated that 13.5 percent of the population exposed to 65 dBA DNL will be highly annoyed, while 37 percent will be highly annoyed if exposed to a 75 dBA DNL (USEPA 1974). Research also indicates that the "type of neighborhood" a person inhabits influences their noise annoyance level, with instances of noise complaints being greater for those living in rural areas than in suburban or urban residential areas (Schomer 2001).

Interior noise levels are typically lower than exterior levels because of the attenuation of the sound energy by the structure, with the amount of noise level reduction provided by a building being dependent on the type of construction and the number of openings such as doors, windows, chimneys, and plumbing vents. The approximate reduction in interior noise is 15 dBA when windows are open and 25 dBA when windows are closed (USEPA 1974). The Air Force normally uses 20 dBA to estimate attenuation for closed windows (Randolph AFB 2003).

Construction Noise. Noise associated with the operation of machinery on construction sites is typically short-term, intermittent, and highly localized. The loudest machinery generally produces peak SPLs ranging from 86 to 95 dBA at 50 ft from the source (Table 3-1). It is important to note that the peak SPL range for construction equipment noise does not take into account the ability of sound to be reflected/absorbed by nearby objects, which would further reduce noise levels. Additionally, interior noise levels would be reduced by 18 to 27 dBA due to the NLR properties of the building's construction materials (FAA 1992).

Table 3-1 Peak Sound Pressure Level of Heavy Equipment From a Distance of 50 Ft

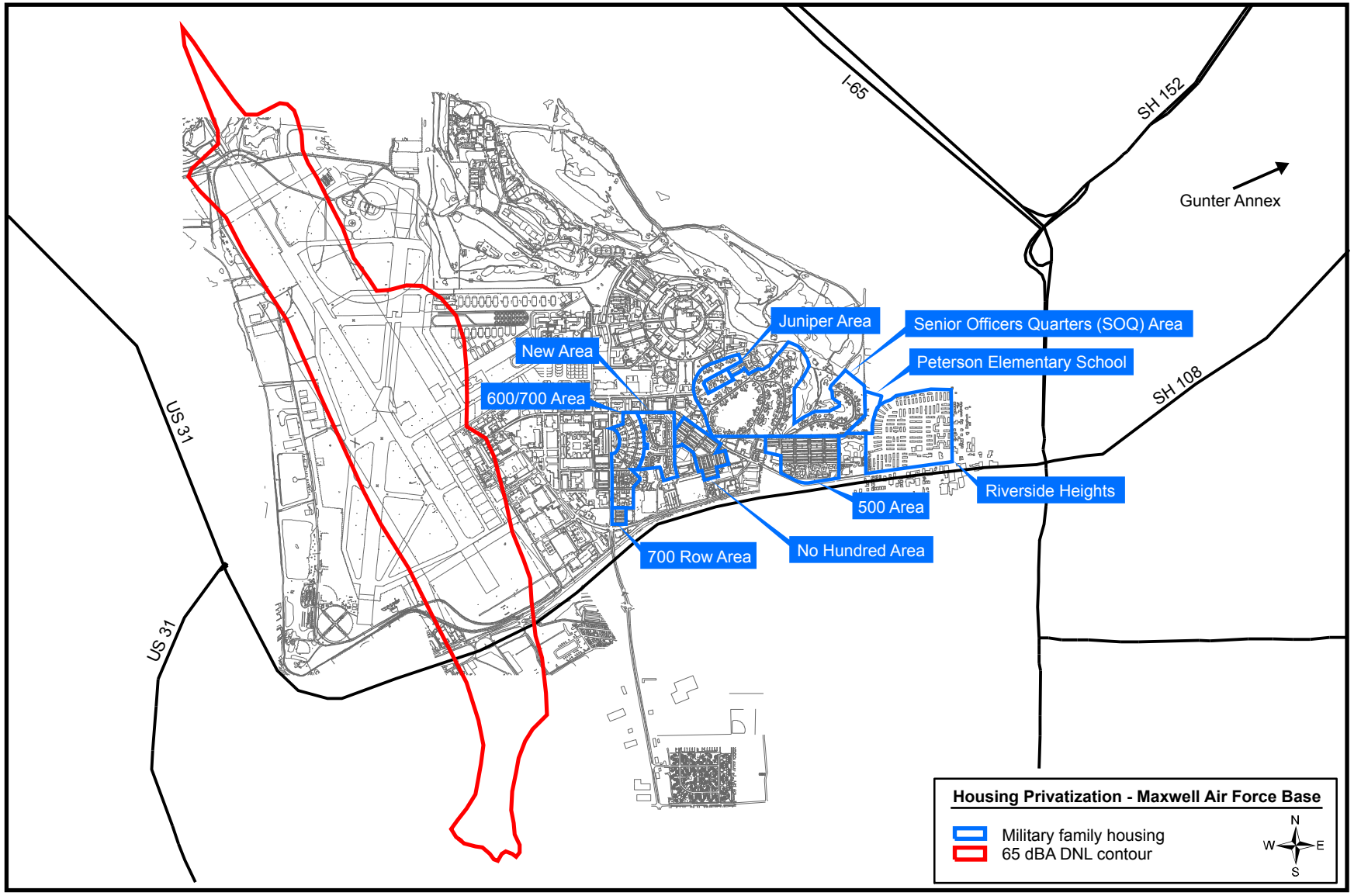
Equipment	Noise Generated*
Bulldozer	95 dBA
Scraper	94 dBA
Front Loader	94 dBA
Backhoe	92 dBA
Grader	91 dBA
Crane	86 dBA

* Noise from a single source
Source: Reagan and Grant 1977

The DNL that results from operating equipment is a function of the frequency, duration, and time of day during which the activity occurs. For example, a bulldozer operating continuously during the 15 "day" hours and for one "night" hour of the DNL metric would create a predicted noise exposure of 64 dBA DNL.

3.3.1.2 Affected Environment

The primary source of noise at Maxwell AFB and its surroundings is from aircraft operations. This environment is fully described in the base's most recent AICUZ report, released in 1997 (Maxwell AFB 1997). Flying operations are typically conducted between the hours of 7 a.m. and 10 p.m. (Maxwell AFB 1997). Predicted noise exposure contours between 65 and 80 dBA DNL generally remain within the base boundary (Figure 3-1) and do not extend into the residential areas on the base, Gunter Annex, or Riverside Heights (Maxwell AFB 1997). The closest MFH, located more than one-third of a mile away from the 65 dBA DNL contour, is the 700 Row Area (Table 3-2). The next nearest housing area is the 600/700 Area, located approximately 0.41 miles outside the 65 dBA DNL contour. The Riverside Heights area is located over 1.4 miles away from the 65 dBA DNL contour.



Proximity of the 65 dBA DNL Contour to Maxwell AFB Military Family Housing	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 3-1 Page 3-5

Table 3-2 Approximate Distance of Existing Housing Units on Maxwell AFB from 65 dBA DNL Noise Contour

Existing MFH	Distance
700 Row Area	0.37 miles
600/700 Area	0.41 miles
New Area	0.52 miles
No Hundred Area	0.67 miles
SOQ Area	0.78 miles
Juniper Area	0.84 miles
500 Area	1.00 miles
Gunter Annex	10.00 miles
Riverside Heights	1.40 miles

Source: Maxwell AFB 1997

3.3.2 Air Quality

3.3.2.1 Regional Meteorology

South-central Alabama, in the vicinity of Maxwell AFB, has a humid subtropical climate, with short, relatively mild winters and long, warm summers. Rainfall is brought by thunderstorms and tropical storms that form over the oceans in the spring, summer, and fall and by mainly continental storm-fronts in the winter. Hurricanes do strike the Alabama coast but hurricane frequency varies and is strongly influenced by the El Nino Southern Oscillation cycle.

The average annual mean temperature for Maxwell AFB is 65 degrees Fahrenheit (°F). The average temperature during the summer months is 81°F, with record extremes of 49°F and 105°F. The average temperature during the winter months is 49°F, with record extremes of 0°F and 85°F. Maxwell AFB averages 77 days per year with temperatures above 90°F. Subfreezing temperatures occur an average of 40 days per year.

The average annual relative humidity is 74 percent. Mean precipitation is 53.4 inches per year, March is the wettest month and October is the driest. The average precipitation during summer months is 24.1 inches. The average precipitation during winter months is 27.1 inches.

The predominant wind direction is from the east to east-southeast. The average wind velocity is 7 miles per hour (mph), with a maximum-recorded 5-second wind speed of 48 mph. Thunderstorms occur an average of 58 days per year, with only 10 percent occurring during winter months. Maxwell AFB experiences on average 108 clear days and 150 cloudy days per year, with the remaining 107 days of the year being partly cloudy. Fog, with accompanying visibility of less than or equal to ¼ mile, occurs an average of 22 days per year, with extremes of 4 days per month in December and January.

3.3.2.2 Air Quality Standards and Regulations

The USEPA has established primary and secondary national ambient air quality standards (NAAQS) under the Clean Air Act Amendments of 1990 (CAAA). The CAAA air quality standards also set emission limits for certain air pollutants from specific sources, set new source performance standards based on best demonstrated technologies, and established national emission standards for hazardous air pollutants.

The CAAA specifies two sets of standards – primary and secondary – for each regulated air pollutant. Primary standards define levels of air quality necessary to protect public health, including the health of sensitive populations such as people with asthma, children, and the elderly. Secondary standards define levels of air quality necessary to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. Federal air quality standards are currently established for six pollutants (known as criteria pollutants), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SOx, commonly measured as sulfur dioxide – SO_2), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}) and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). Although O_3 is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered as a pollutant when reporting emissions from specific sources, because O_3 is not typically emitted directly from most emissions sources. It is formed in the atmosphere from its precursors – nitrogen oxides (NOx) and volatile organic compounds (VOCs) – that are directly emitted from various sources. Thus, emissions of NOx and VOCs are commonly reported instead of O_3.

The NAAQS for the six criteria pollutants are shown in Table 3-3. Units of measure for the standards shown in this table are micrograms per cubic meter of air ($\mu g/m^3$), except for ozone, which is in parts per million (ppm).

The USEPA classifies the air quality within an Air Quality Control Region (AQCR) according to whether the region meets federal primary and secondary air quality standards. An AQCR or portion of an AQCR may be classified as attainment, non-attainment, or unclassified with regard to the air quality standards for each of the six criteria pollutants. "Attainment" describes a condition in which standards for one or more of the six pollutants are being met in an area. The area is considered an attainment area for only those criteria pollutants for which the national standards are being met. "Nonattainment" describes a condition in which standards for one or more of the six pollutants are not being met in an area. "Unclassified" indicates that air quality in the area cannot be classified and the area is treated as attainment. An area may have all three classifications for different criteria pollutants.

Table 3-3 National Ambient Air Quality Standards

Pollutant	Standard Value ($\mu g/m^3$)a	Standard Type
CO		
1-hr average	40,000	Primary
8-hr average	10,000	Primary
NO_2		
Annual average	100	Primary and secondary
O_3		
1-hr average[b]	0.12	Primary and secondary
8-hr average[c]	0.08	Primary
Lead		
Quarterly average	1.5	Primary
PM_{10}		
24-hr average[d]	150	Primary and secondary
Annual average[e]	50	Primary and secondary
$PM_{2.5}$		
24-hr average[f]	65	Primary
Annual average[g]	15	Primary
SO_2		
3-hr average	1,300	Secondary
24-hr average	365	Primary
Annual average	80	Primary

CO=carbon monoxide NO_2=nitrogen dioxide O_3=ozone
SO_2=sulfur dioxide $\mu g/m^3$=micrograms per cubic meter
$PM_{2.5}$=particulate matter equal or less than 2.5 micrometers in diameter
PM_{10}= particulate matter equal or less than 10 micrometers in diameter

[a] Units for ozone are ppm.

[b] The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1. The 1-hour NAAQS will no longer apply to an area 1 year after the effective date of the designation of that area for the 8-hour ozone NAAQS. The effective date for most areas is 15 June 2004.

[c] To attain the 8-hour ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

[d] The 24-hour standard for PM_{10} is not be exceeded more than once per year.

[e] To attain the annual PM_{10} standard, the expected annual arithmetic mean PM_{10} concentration at each monitor within an area must not exceed 50 $\mu g/m^3$.

[f] The $PM_{2.5}$ 24-hour standard is based on the 3-year average 98th percentile of 24-hour concentrations at each population-oriented monitor.

[g] The $PM_{2.5}$ annual standard is based on 3-year average of annual arithmetic means.

Air quality management at Air Force installations is established in AFI 32-7040, Air Quality Compliance. AFI 32-7040 requires installations to achieve and maintain compliance with all applicable federal, state, and local standards. Air quality compliance involves prevention, control, abatement, documentation, and reporting of air pollution from stationary sources and mobile sources if located in nonattainment areas. Maintaining compliance with air quality regulations may require reduction or elimination of pollutant emissions from existing sources and control of new pollution sources.

3.3.2.3 Regional Air Quality

Maxwell AFB is located within the Columbus-Phoenix City Interstate AQCR 2, specifically Montgomery County. The air quality in the region is generally good. All 23 counties within AQCR 2 are classified by the USEPA as attainment or unclassified for all criteria pollutants.

Potential emissions from the proposed and alternative actions would occur primarily from demolition and construction activities at Maxwell AFB and would include activities such as grading, filling, and equipment operation. Thus, emissions would be localized within the area surrounding the base. For this reason, the analysis in this EA will address potential impacts within the Montgomery Metropolitan Statistical Area (MSA), which includes Autauga, Elmore and Montgomery Counties, instead of the entire AQCR 2 that covers a large geographical area.

Alabama is located in the region designated as the Visibility Improvement State and Tribal Association of the Southeast (VISTAS). VISTAS is a collaborative effort of state governments, tribal governments, and various federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility, and other air quality issues in the southeastern United States. In the next few years, the agencies participating in VISTAS will conduct a scientific analysis of regional haze problems, impacts from natural and man-made pollutants, and potential solutions. VISTAS's first task is to improve the emission inventory used to evaluate impacts in Class I areas. Under the Clean Air Act, a Class I area is one in which visibility is protected more stringently than under the NAAQS, and includes national parks, wilderness areas, monuments, and other areas of special national and cultural significance. There are no Class I areas located within 200 kilometers of Maxwell AFB.

3.3.2.4 Maxwell AFB Air Quality

An accurate emissions inventory is needed for assessing the potential contribution of a source or group of sources to regional air quality. An emissions inventory is an estimate of the actual and potential pollutant emissions generated by a source or sources over a period of time, normally a calendar year. The inventory accounts for permitted sources that are required to report annual emissions to ADEM. Stationary emission sources at Maxwell AFB include boilers, generators, surface coating, paint booths, storage tanks, fueling operations, and woodworking operations, among others. Mobile emission sources are not included in the emission totals for Maxwell AFB. Table 3-4 compares the 2003 actual and potential emissions for Maxwell AFB and the 2002 Montgomery MSA emissions. As shown in Table 3-4, Maxwell AFB contributes an insignificant amount to the Montgomery MSA emission totals.

Table 3-4 Montgomery MSA Emissions and Maxwell AFB Actual[a] and Potential Emissions[b]

	Annual Emissions (tpy)					
	CO	**VOC**	**NOx**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2002 Montgomery Metropolitan Statistical Area[c]	145,548	24,336	20,558	5,505	23,796	7,118
2003 Maxwell AFB Actual Emissions[d]	3.8	4.1	5.8	0.10	0.51	0.51
2003 Maxwell AFB Potential Emissions[d]	32.3	12.6	73.0	3.2	5.5	5.5

tpy = tons per year

[a] Actual emissions are the air pollutant emissions that result from the actual operation and material usage quantities during a one-year period (i.e., typically a calendar year).

[b] Potential emissions are those emissions resulting from the operation of an emission unit under maximum potential conditions, unless operation is restricted by a regulatory condition (e.g. fuel use limit in permit). For example, calculating emissions from a boiler by taking into account its maximum rated heat input capacity and operation 24 hours per day, 7 days per week, 52 weeks per year would result in a potential emission calculation.

[c] Draft TriCounty (Autauga, Elmore, and Montgomery) emission totals. Source: (Cole 2005).

[d] As reported in the 2003 Air Emissions Inventory for Maxwell Air Force Base, July 2004. Includes the emission totals from Gunter Annex. Lead emissions from Maxwell AFB and Gunter Annex are not reported in the 2003 Air Emissions Inventory.

3.3.3 Water Resources

3.3.3.1 Surface Water

Maxwell AFB (Main Base), Gunter Annex, and Riverside Heights are located within the Alabama/Cahaba River Basin; accordingly, drainage and runoff is eventually discharged to the Alabama River.

National Pollutant Discharge Elimination System (NPDES) permitting for point and stormwater discharges has been delegated to the State of Alabama. Individual and general stormwater permits require the permittee to develop and implement a pollution prevention plan to monitor discharges for specific pollutants. An Alabama Notice of Intent covers Gunter Annex for Stormwater Management under ADEM's Phase II Stormwater Program. Maxwell Main Base discharges are currently operated under an industrial permit with the City of Montgomery until 2007. The permit requires monitoring of specific pollutants at outfalls and utilization of best management practices to control runoff. The receiving water is the Alabama River.

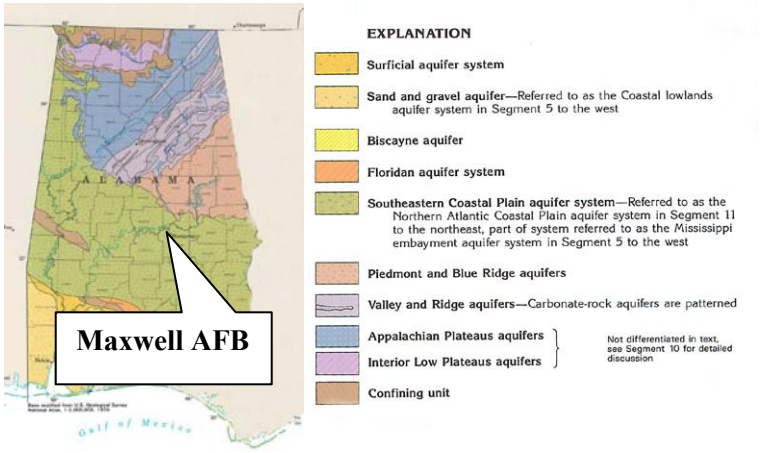
A network of existing inverts, stormwater channels, and oil/water separators currently controls stormwater runoff from Maxwell Main Base and Gunter Annex. Due to the large amount of impermeable surfaces throughout the Maxwell AFB complex, the volume of stormwater runoff is relatively high. Stormwater from Maxwell Main Base is routed to four outfalls that discharge upstream of ADEM ambient monitoring station A-1a of the Alabama River, located approximately 0.4 miles north of the base. Monitoring at station A-1a indicates the Alabama River fully supports aquatic life uses.

Gunter Annex utilizes a stormwater management design similar to that of Maxwell Main Base and is included under the general permit for a separate storm sewer system. Surface water at Gunter Annex is directed overland and through base infrastructure toward the west and Three-Mile Creek.

3.3.3.2 Groundwater

The areas where eight major aquifers are exposed at land surface in Alabama are shown in Figure 3-2. Many of these aquifers extend underground far beyond the limits of outcrop, and, accordingly, may be used for water supply in much larger areas than the size of their outcrop may indicate.

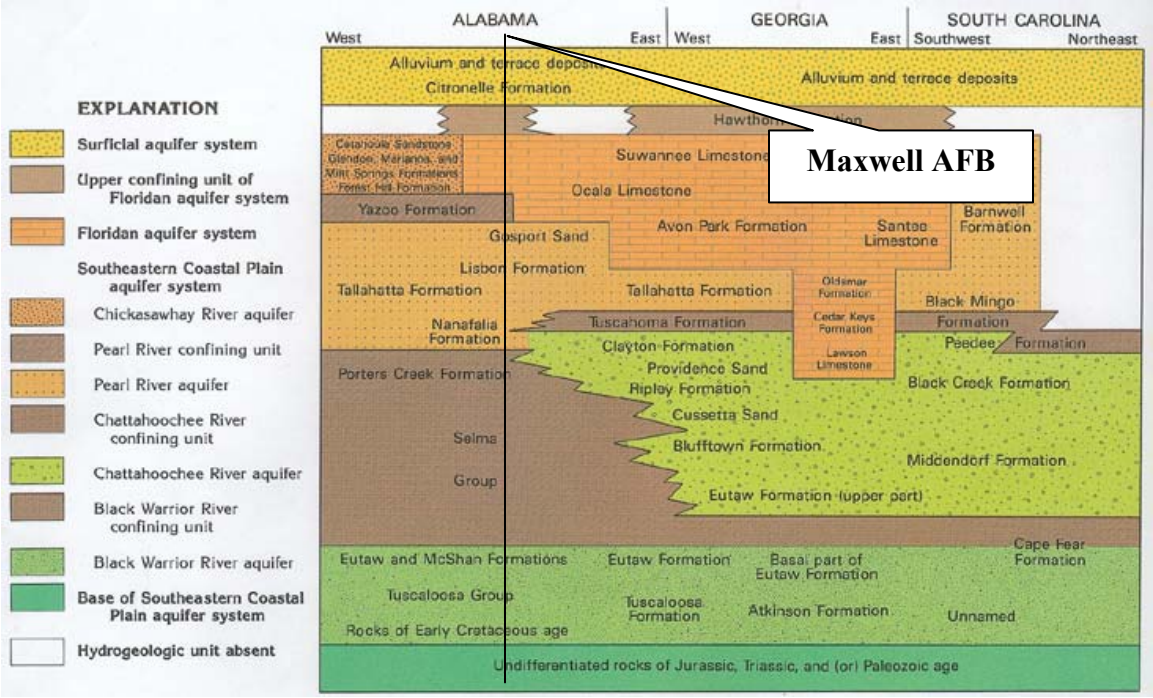
Figure 3-2 Aquifer Systems of Alabama



The three prominent aquifer systems in the Maxwell AFB area are, from shallowest to deepest: the surficial aquifer system, the Floridian aquifer system, and the Southeastern Coastal Plain aquifer system. The surficial aquifer system consists mostly of unconsolidated sand, but also contains a few beds of shell and limestone. The Floridian aquifer system consists of limestone and dolomite, and is the most productive of the aquifers in the mapped area in terms of total water yield. The Southeastern Coastal Plain aquifer system consists of four regional aquifers that are predominantly sand, but these aquifers also contain some beds of gravel and limestone. Water throughout the entire Coastal Plain aquifer system is present primarily in intergranular pore spaces.

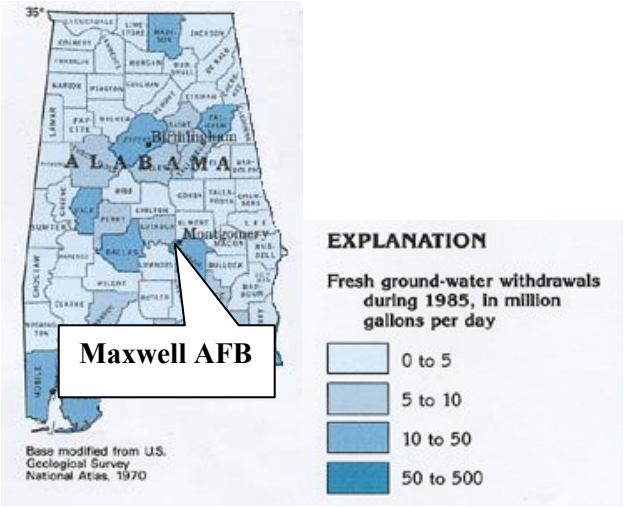
The sediments of the Southeastern Coastal Plain aquifer system have been grouped into seven regional hydrogeologic units—four regional aquifers separated by three regional confining units. The geologic formations comprising the four regional aquifers and the three regional confining units that separate them are shown in Figure 3-3. Also shown in Figure 3-3 is the Floridian aquifer system and the surficial aquifer system, which is generally thin and is not present everywhere. Maxwell AFB lies approximately midway between the east and west ends of Alabama in this figure.

Figure 3-3 Vertical Sequence of Aquifers in the Maxwell AFB Area



Total withdrawals of fresh groundwater in 1985 (current for 2002), by county, are shown in Figure 3-4. Montgomery County falls into the 10 to 50 million gallons per day (mgd) category. In general, counties with the largest withdrawals are those that have a large population. Fresh groundwater withdrawals for most water use categories are increasing, according to a 1990 nationwide compilation of water-use data by the U.S. Geological Survey.

Figure 3-4 Groundwater Withdrawal by County



The following paragraphs describe groundwater conditions at Maxwell AFB, Gunter Annex, and Riverside Heights with respect to past activities at these locations. This information was summarized from Environmental Baseline Surveys (EBSs) prepared for the properties (USAF 2004a, USAF 2004b, USAF 2004c).

Maxwell Main Base. Maxwell AFB currently maintains and updates an ERP for the Main Base as well as Gunter Annex. Under the program, a number of sites have been identified for investigation. These sites are discussed in more detail in recent EBS reports prepared for the base and the Riverside Heights area. These sites include underground storage tank (UST) locations and areas of surface contamination that have been investigated. Most of the sites have been addressed and received "no further action" reports. The remaining sites are being monitored and appear to present minimal impact issues for groundwater in project area.

Gunter Annex. One ERP Site and two former Areas of Concern (AOCs) have been identified within the boundaries of the 300 Area and a portion of one ERP extends within the eastern boundary of the 1600 Area. The presence of contaminated groundwater in the 1600 Area is at concentrations that do not pose a risk to human health and the environment and is confined to the shallow surficial aquifer. Groundwater contamination within the 300 Area IRP Site is also at concentrations that do not pose a risk to human health and the environment.

Riverside Heights. Currently there is a UST within the Riverside Heights Area. Because of historical evidence indicating past UST presence within the Riverside Heights Area, Phase II EBS sampling was performed. Contaminants of concern that were detected were not at concentrations that would appear to warrant regulatory response. Historic and current UST activities within the Riverside Heights Area do not appear to pose a risk to human health and the environment.

While the groundwater contamination located within the subject properties is considered a due diligence environmental risk, it does not appear to pose a health-based environmental risk to the housing units or residents provided there is no future groundwater use and there are no changes in site conditions that would cause contact with groundwater.

There is no evidence to indicate that there are USTs currently present in MFH areas. However, USTs have been present at some of the housing areas in the past, notably within the 300 Area. While the historic presence of USTs is considered to present potential environmental risk to the subject property, it has been determined that no corrective action appears warranted.

3.3.4 Cultural Resources

3.3.4.1 Regulations and Criteria

Cultural resources are prehistoric and historic sites, districts, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. A historic district is an area that "possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1997).

Numerous laws and regulations require that possible effects on cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies. In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the NHPA (especially Sections 106 and 110), the Archaeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection and Repatriation Act (NAGPRA). Under AIRFA, Maxwell AFB has no known traditional cultural or ceremonial sites to which the base must provide access.

Section 106 of NHPA requires that federal agencies give the Advisory Council on Historic Preservation a "reasonable opportunity to comment" on proposed actions. Federal agencies must consider whether their activities could affect historic properties that are already listed, determined eligible, or not yet evaluated under the NRHP criteria. Properties that are either listed on or eligible for listing in the NRHP are provided the same measure of protection under Section 106.

The following criteria have been established as guidance for evaluating potential entries to the NRHP. "Significance" in American history, architecture, archaeology, and culture is granted to districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that meet at least one of the following criteria:

- an association with events that have made a significant contribution to the broad patterns of history (Criterion A);
- an association with the lives of persons significant in history (Criterion B);

- embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguished entity whose components may lack individual distinction (Criterion C); or

- have yielded, or may likely yield, information important in prehistory or history (Criterion D).

3.3.4.2 Historic Resources

3.3.4.2.1 Main Base

Based on the evaluations of architectural surveys at Maxwell Main Base, it has been determined that two NRHP-eligible districts exist within the affected environment. These two districts are the SOQ historic district—listed on the NRHP—and the 600/700 Area (NCO Quarters historic district)—recommended eligible for inclusion on the NRHP.

The SOQ historic district was listed on the NRHP 2 March 1988. The district includes 99 houses and 51 garages in the French Provincial style constructed between 1931 and 1934. Except for the Commanding General's Quarters (Building 337—known as the Curry House), original floor plans followed one of nine different designs, providing three- and four-bedroom residences for officers and their families. The Commanding General's Quarters has a unique floor plan that originally provided five bedrooms (one bedroom has since been converted to a dressing room). The SOQ houses are arranged in a park-like setting with winding streets and expansive lawns, reflecting the "City Beautiful" movement that influenced urban design in the early twentieth century. Building 337 sits in the center of a cul-de-sac, symbolically demonstrating the military hierarchy and important position of the Commanding General (Figure 3-5; Harvey and Poplin 1999; Harvey et al. 1999).

The NRHP-eligible NCO historic district contains 32 two-story duplexes, 13 one-story bungalows, and 20 garages designed in the Spanish Mission style. Spatially arranged in three distinctive clusters, the NCO quarters were constructed between 1928 and 1934. The bungalows, which were the first to be built in 1928, represent some of the oldest buildings at Maxwell AFB. The bungalows and 14 of the NCO duplexes are arranged along three crescent-shaped streets. To the south are two more clusters of duplexes, arranged in an elliptical or rectangular pattern (see Figure 3-5; Harvey and Poplin 1999; Harvey et al. 1999).

The World War II-era barracks (now the 700 Row Area, 500 Area, and No Hundred Area homes) that exist within the affected environment on the Main Base have been determined ineligible for listing in the NRHP due to a lack of integrity. The Alabama SHPO has concurred with this finding (Appendix D).

3.3.4.2.2 Gunter Annex

Historic resources within the affected environment at Gunter Annex include World War II-era barracks (now the 300 Row Area) that have been determined ineligible for listing in the NRHP due to a lack of integrity. The Alabama SHPO has concurred with this finding (Figure 3-6 and Appendix D).

3.3.4.2.3 Riverside Heights

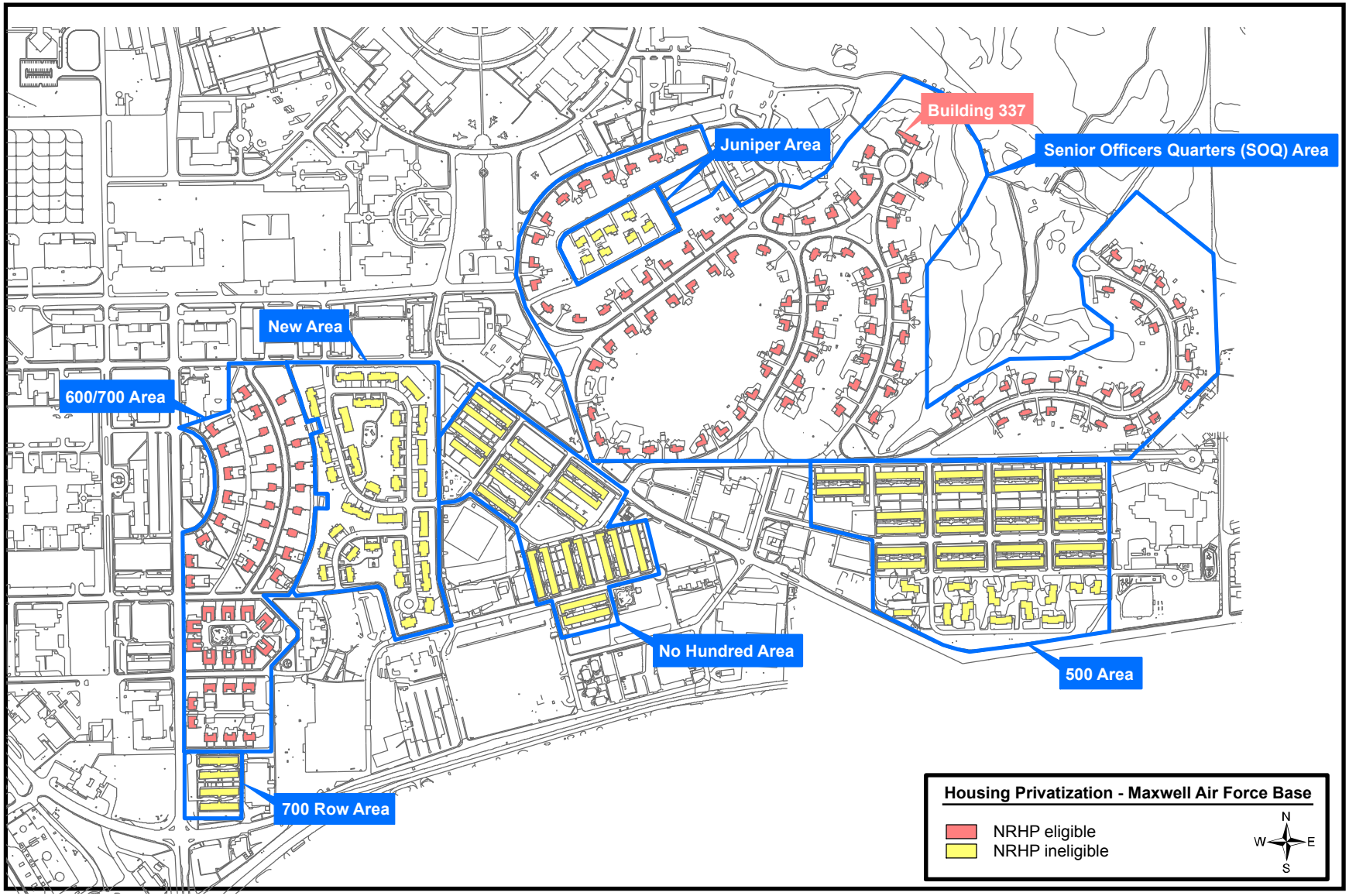
Historic resources within the affected environment at Riverside Heights include the Central Office, three public housing complexes, and the Peterson Elementary School (Figure 3-7).

The Central Office (the Montgomery Housing Authority Administration Building), 1020 Bell Street, was constructed in 1845. Known as the "Chappell House," this plantation-era home remained in the James Chappell family for several generations but became an integral part of the Riverside Heights public housing development. The Chappell House has undergone a number of additions and alterations, including an addition to the building's north and east sides that itself was extended in the 1990s. Although modified, the Chappell House is listed as a Montgomery city landmark.

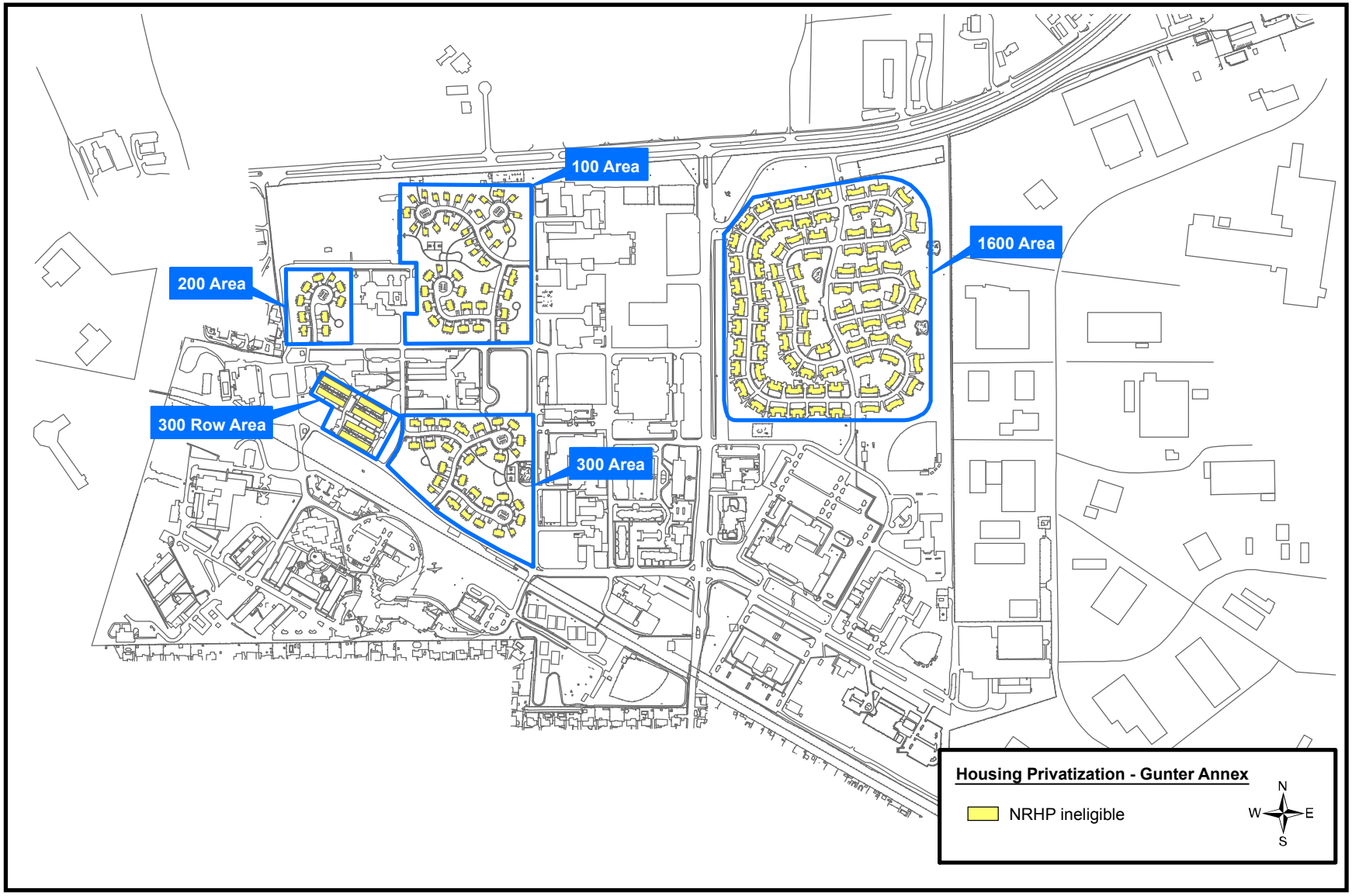
The Riverside Heights public housing consists of three separate complexes designated as ALA 6-7, ALA 6-4, and ALA 6-1. Construction on the first complex (ALA 6-7) began in 1935 and was completed in 1937. This complex represents one of 52 Public Works Administration (PWA) Direct-Built housing projects in the United States and one of only three in Alabama. The second group of public housing at Riverside Heights (ALA 6-4) was constructed in 1940 and originally served as defense worker housing during World War II mobilization efforts. According to a 1942 Montgomery Housing Authority report, this complex was the first World War II defense worker housing built in the country (Montgomery Housing Authority 1942). The third complex (ALA 6-1) was completed in 1941.

In addition to the Central Office and public housing complexes, the Riverside Heights property also contains the Peterson Elementary School. Construction on this building began in November 1955 and was completed in 1956. Originally known as Maxwell Field, the school's name changed to Pendar Street School in 1972. In 1999, it received its current name (Peterson Elementary School ca. 1976-1977).

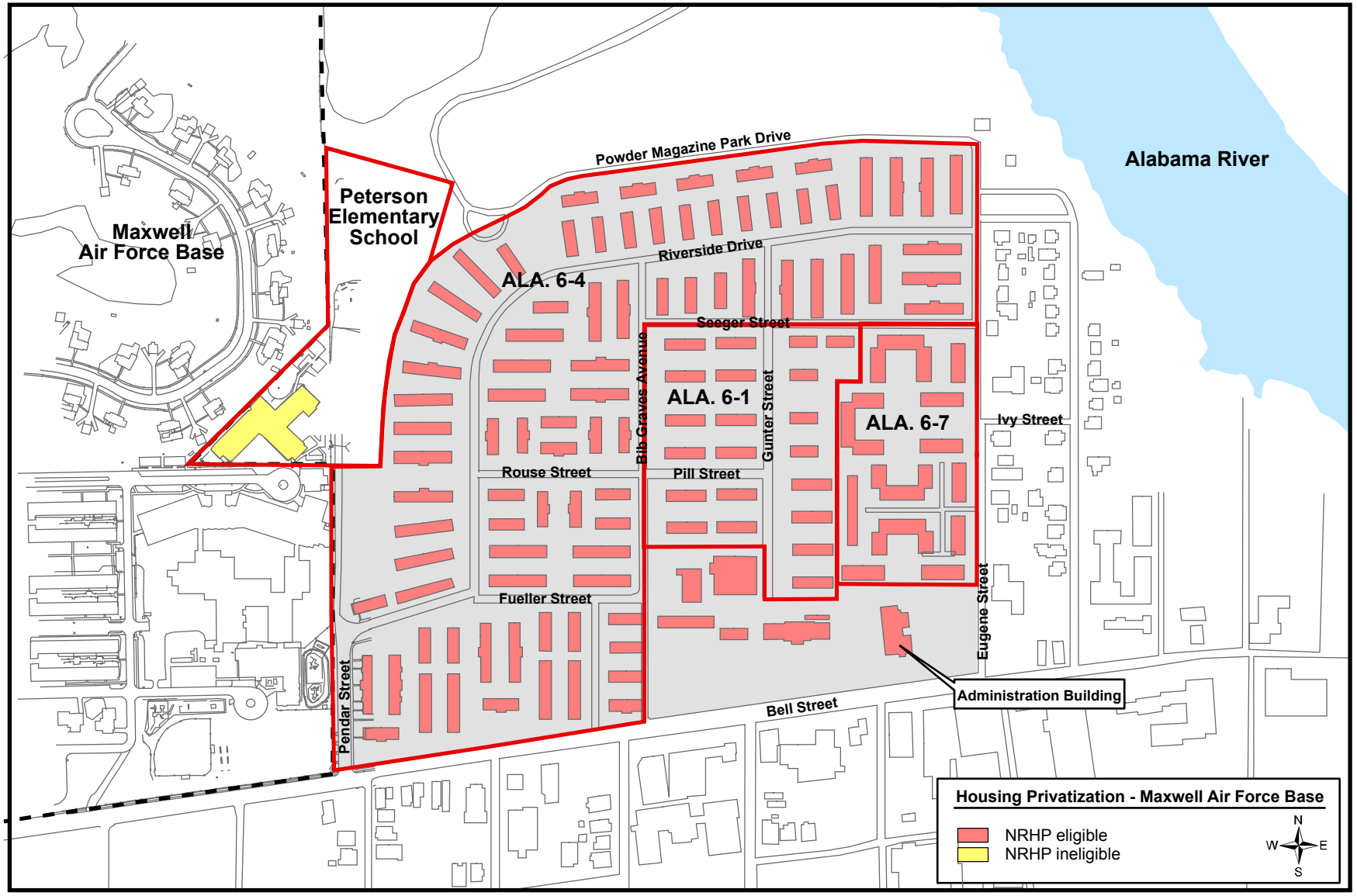
It is assumed that the Alabama SHPO and the City of Montgomery will jointly make a determination of eligibility concerning the Riverside Heights public housing complexes and Peterson Elementary School. The Air Force will accept this property only on the condition that the SHPO or on appeal, the Advisory Council (ACHP), has concurred with the City of Montgomery regarding the structures' ineligibility for inclusion in the NRHP.



Maxwell Main Base Historic Resources	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 3-5 Page 3-17



Gunter Annex Historic Resources	***Maxwell Air Force Base*** Military Family Housing Privatization Gunter Annex Historic Resources	Figure 3-6 Page 3-18



Riverside Heights and Peterson Elementary School Historic Resources	***Maxwell Air Force Base*** Military Family Housing Privatization Riverside Heights and Peterson Elementary School Historic Resources	Figure 3-7 Page 3-19

3.3.4.3 Archaeological Resources

3.3.4.3.1 Previous Investigations

Five archaeological investigations (Chase 1964; Garrow 1988; McMakin et al. 1996; U.S. Army Corps of Engineers [USACE], Mobile 1995; USAF AETC 1994) have been previously conducted in relation to Maxwell AFB proper and Gunter Annex. The earliest investigations (Chase 1964) on lands within and adjacent to Maxwell AFB resulted in the recording of 26 archaeological sites, five (1Mt92, 1Mt93, 1Mt107, 1Mt200, 1Mt257) of which were discovered on the south side of the Alabama River on Maxwell AFB property (see Harvey and Poplin for 1999 for site locations).

In 1988, Garrow and Associates, Inc., conducted a reconnaissance survey and conditions assessment of known sites at Maxwell AFB and Gunter Annex. An assessment of disturbance of the two landforms (Alabama River floodplain and the uplands) was also conducted. Garrow (1988) noted that the archaeological potential of the uplands had been largely destroyed by the construction of Maxwell AFB. The bluff edge, which overlooks the Alabama River floodplain, was judged to have a high potential for containing archaeological sites even though golf course construction had disturbed significant sections. The SOQ Area was also noted as a potentially undisturbed area.

In 1994 HQ AETC sponsored an archaeological survey in association with the expansion of Runway 33. Two archaeological sites were recorded. Site 1Mt256 was determined to be ineligible for inclusion in the NRHP. Site 1Mt255, located on the western margin of the base, was recorded as a surficial lithic scatter dating to the Archaic period. This site was not evaluated for NRHP eligibility.

The 1995 investigations, sponsored by the USACE, Mobile District, focused on the northeastern portion of the base, near the federal prison. Auger testing and surface investigation revealed the area to be highly disturbed and with no archaeological sites.

The study by McMakin et al. (1996) included the archaeological assessment of three potentially undisturbed areas and the reevaluation of previously recognized sites. The potentially undisturbed areas included the golf courses (east and north sections of the base), the SOQ, and a strip of potentially intact soil west of March Road. The survey resulted in the assessment of five previously recorded sites (1Mt93, 1Mt200 [possible site of Alibamu Indian village, Towassa], 1Mt255, 1Mt279, and 1Mt283), one unrecorded site (Garrow Site 3), and four isolated finds (Isolates 1–4). The presence of potentially intact cultural deposits at sites 1Mt93, 1Mt200, and 1Mt279 contributed to the recommendation that these sites are potentially eligible for inclusion in the NRHP. The remaining sites (1Mt255, 1Mt283, Garrow Site 3) and the four isolates are considered ineligible for inclusion in the NRHP. The assessment of the SOQ (Main Base) and Gunter Annex areas revealed significant disturbance from construction activities. Consequently, it was recommended that these areas require no further management consideration for archaeological resources (McMakin et al. 1996:58–60).

3.3.4.3.2 Archaeological Properties at Maxwell AFB Main Base and Gunter Annex

Previous investigations of Maxwell AFB have revealed that most of the upland landform has been significantly disturbed by the construction of the base facilities. None of the Areas of Potential Effect (APEs) (the SOQ or 600/700 Area at the Main Base or Gunter Annex) contains significant archaeological properties.

3.3.4.3.3 Archaeological Properties at Riverside Heights and Peterson Elementary School

The portions of the Riverside Heights property and the Peterson Elementary School property within the APE are similarly impacted by high-density construction (Figure 3-8). Although no archaeological investigations have been conducted within this portion of the APE, an evaluation of archaeological potential may be based on the landform setting, level of disturbance, and available historical documentation. Given the location of prehistoric archaeological sites (1Mt200, 1Mt279) on the same landform to the north, the potential for a prehistoric site being located in the Riverside Heights area is considered good. Examination of historical records indicates that the Chappell House existed at this site from 1845 and that a powder magazine (1Mt33) was built north of this property during the Civil War. Outbuildings related to the plantation house and activities related to the powder magazine may be reflected in the archaeological record within the Riverside Heights APE. Block plans drawn in 1935 for Riverside Heights public housing indicate the prior presence of a barn and frame house in the southeastern portion of the property. Although the development of the properties for public housing and education within the Riverside Heights APE likely disturbed large portions of the potential archaeological context within the APE, the potential for finding significant, intact archaeological deposits of either the prehistoric or historic period within this portion of the APE remains good.

Riverside Heights and Peterson Elementary School 2002 Aerial (courtesy of TerraServer)	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 3-8 Page 3-22

3.3.5 Hazardous Materials and Wastes

3.3.5.1 Hazardous Materials

Hazardous material use and management at Maxwell AFB are regulated under the Toxic Substances Control Act (TSCA), the OSHA, the Emergency Planning and Community Right-to-Know Act, and Air Force Occupational Safety and Health Standards 127-43. Concurrently, hazardous material use and management at Riverside Heights are regulated under the same acts and agencies, except for the Air Force Occupational Safety and Health Standards. The regulations require personnel using hazardous materials to be aware of the possible dangers, locate material safety data sheets (MSDSs) for all hazardous materials that they are using on-site, and wear the correct personal protective equipment (PPE) required for materials that are being used. The Maxell AFB Hazardous Materials Management Program maintains a list of all hazardous chemicals, including MSDSs used on-base.

Current operations at Maxwell AFB require the use of hazardous materials. These hazardous materials can be found in varying quantities. Hazardous materials are used by military personnel and on-base contractors. The location of hazardous materials, procedures and equipment to prevent and clean up a release, and actions to be taken in the event of a release are located in the Maxwell AFB Hazardous Waste Management Plan.

3.3.5.1.1 Asbestos

Based on information gathered from the EBSs prepared for Maxwell AFB, asbestos-containing material (ACM) is present in some MFH units. ACM is present in pipe insulation, cement pipe, floor tile, attics, walls, and ducts. The ACM is likely to be found on the Main Base in the 600/700 Area, 700 Row Area, No Hundred Area, and the SOQ/Juniper Area; and at the Gunter Annex in the mechanical room of the 300 Row Area. ACM removal has occurred in the 500 Area, SOQ/Juniper Area, and the 1600 Area at the Gunter Annex (USAF 2004b). Replacement of the HVAC and electrical system in the SOQ/Juniper Area is ongoing and includes ACM abatement (USAF 2004a). According to the EBS, ACM was historically or is currently present in each of the housing areas and asbestos remediation/management must be considered. An Asbestos Management Plan is in effect at Maxwell AFB, and qualified contractors are hired to perform abatement and disposal activities.

Based on information gathered from the EBS for the Riverside Heights Housing Project and Peterson Elementary School, it appears that ACM is not currently found within Riverside Heights ALA 6-4, Riverside Heights ALA 6-1, Riverside Heights ALA 6-7, and Peterson Elementary School (USAF 2004c). It was noted that ACM could be found within the cement used to construct sanitary and drinking water lines in the 1930s and 1940s and non-friable ACM could be found with the vinyl floor tile and/or mastic, and around the stems and valves of the piping system.

ACM abatement activities at the subject properties occurred during the 1980s and 1990s. ACM abatement activities at the Central Office were conducted in 1980 and 1991. ACM was removed from pipe insulation and ceiling tiles. Peterson Elementary School underwent ACM removal activities in the mid-1980s; pipe insulation, boiler room insulation, and ceiling tiles were abated.

Riverside Heights ACM abatement commenced in 1988 and was completed in 1992; floor tiles containing ACM were removed. Peterson Elementary School has an Asbestos Management Plan through the Montgomery Public School District. Although abatement activities have commenced at these areas, due to the age of the facilities it is possible that ACM may still be present at all facilities (USAF 2004c).

3.3.5.1.2 Lead-Based Paint

Based on interviews conducted during the EBSs, lead-based paint (LBP) is found in all MFH areas on the Main Base, except for the New Area and the Juniper Area. LBP is also found in all MFH areas on Gunter Annex, except for the 100 Area, 200 Area, and the 1600 Area. LBP is found on soffits, windowsills, baseboards, doors, exterior trim work, front and back porches, molding, and baseboards.

Maxwell AFB maintains a database related to the LBP survey conducted on-base and has a LBP Management Plan. This plan establishes responsibilities, procedures for assessing risk, hazard management and risk reduction, medical screening, record keeping, and waste disposal requirements, and provides for capture/removal of LBP scrapings or dust. Past LBP removal activities have included the front porch of four units in the 600/700 Area, porches in the 700 Row Area, porches in the No Hundred Area, and handrails of front and back porches of the SOQ Area. Historic painting activities did not include capture and proper disposal of paint scrapings or dust; therefore, it is possible that soils present in areas that have LBP located on/in facilities may exhibit elevated concentrations of lead (USAF 2004b).

Surveys and interviews conducted during the EBS indicate that LBP could possibly be historically present in Peterson Elementary School and in the soil within Riverside Heights (USAF 2004c). For Riverside Heights, the Montgomery Housing Authority uses the Lead-Based Paint Manual published by the HUD Office of Lead Hazard Control as guidance when addressing LBP concerns. LBP was removed from Riverside Heights ALA. 6-1, Riverside Heights ALA. 6-4, and Riverside Heights ALA. 6-7. The abatement of LBP included either removal or encapsulation of the LBP. During the removal of LBP, the paint scrapings and dust were captured and disposed of properly. A LBP survey is yet to be conducted at Peterson Elementary School; therefore, it is not known if LBP is present within the facility. However, based upon the age of the facility, it is possible that LBP is present. Historic painting activities did not include capture and proper disposal of paint scrapings or dust; therefore, it is possible that soils present in areas that have LBP located on/in facilities may exhibit elevated concentrations of lead. Currently, the listing of Riverside Heights facilities as LBP free is under review by outside parties (USAF 2004c).

3.3.5.2 Pesticides

Residents of MFH are responsible for the management of general household pests such as roaches, ants, flies, silverfish, and mice using commercially available products or products from the Self Help Store. Additionally, residents may hire an outside contractor from an approved vendor list for more extensive pesticide applications, but nothing precludes the residents from hiring other contractors. Pesticides and herbicides such as Roundup®, ant and roach bait, Amdro®, wasp and hornet spray, and mousetraps are available through the Self Help Store.

Common pesticides and herbicides used on-base by Entomology are: glycophosate, prometon, diclofop-methyl, dithiopyr, fenarimol, chlorophenoxy, triphenyltin, simazine, 2,4-D, chlorothalonil, metsulfuron, cypermethrin, lambdacyhalothrin, hydramethylnon, fipronil, cyfluthrin, pyrethrins, tetramethrin, acephate, and brodificoum (USAF 2004a and USAF 2004b).

Historic pesticide applications have occurred throughout Maxwell AFB. Historical pesticides included diazinon, allethrin, chlordane, and pyrethrin-based products. These products were used within appropriate guidelines for application at the time that they were used. The last documented use of chlordane was in the mid-1980s. Due to the persistence of chlordane in the environment, it is likely that concentrations of chlordane may be present in soils. Disclosure of chlordane use is required by law prior to the transfer of property (USAF 2004a, USAF 2004b).

Limited soil sampling for pesticide characterization was performed in the SOQ/Juniper Area and indicated that Dichloro-diphenyl-trichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), dieldrin, and endrin were detected. Therefore, in addition to the possible presence of other types of herbicides and pesticides listed above, the types of pesticides detected in soils at the SOQ Area on the Main Base may also be present in the other housing areas due to similarities in application practices (USAF 2004a).

In Riverside Heights, the Montgomery Housing Authority is responsible for applying pesticides and herbicides, and no pesticides were stored, manufactured, or disposed of at Riverside Heights. Prior to approximately 2002, the housing authority hired an outside contractor to apply pesticides and herbicides. The contractors would have used products commercially available to them at the time; the specific products used are not known. Currently a Montgomery Housing Authority employee applies the pesticides and herbicides. The products applied are: naphthalene, fipronil, brodifcoum, pyrethroid, permethrin, aliphatic petroleum distillates, and tetramethrin. Based upon interviews conducted for the EBS, no products containing chlordane were applied by the Montgomery Housing Authority, but it is unknown if the contractors used such products. Broad pesticide and herbicide application is not present at Peterson Elementary School. Products currently used at the school include RoundUp™ and Amdro™.

Prior to the development of these areas for military use and public use, the land was cultivated for agricultural purposes. Crops in the area have historically consisted of cotton, peanuts, and/or pecans. Arsenic was a common constituent in pesticides historically used for the cultivation of cotton. Typical applications of chemicals associated with historic cultivation and harvesting of cotton may have included crop dusting. Prior to the current use of the properties, this area was developed as a former textile community and numerous residential and commercial/industrial structures were historically present. It is likely that pesticides may have been applied in association with these historic structures (USAF 2004 a, USAF 2004b, USAF 2004c).

3.3.5.3 Hazardous Waste

Hazardous wastes are defined by the Solid Waste Disposal Act (SWDA) as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, RCRA subtitle C (40 CFR, Parts 260 through 270). USEPA regulatory authority is subsequently delegated to the State of Alabama. Hazardous

waste management at Maxwell AFB is also regulated under AFI 32-7013, Hazardous Waste Management and Minimization.

These regulations are implemented at Maxwell AFB through hazardous waste permitting procedures and the Maxwell AFB Hazardous Waste Management Plan. The plan details hazardous waste packaging, turn-in, transportation, storage, record keeping, and emergency procedures. Approximately 14,047 pounds (lbs) of RCRA hazardous waste was generated and disposed of at the Defense Reutilization and Marketing Office (DRMO) during 2003 (Stanford 2004a). Hazardous waste is generated at Maxwell AFB from aircraft maintenance, spent hazardous materials, and spills. Maxwell AFB does not currently maintain any active permitted hazardous waste storage facilities. Air Force waste management operations at Maxwell AFB are registered with the USEPA under identification number AL0570024182 (USAF 2002c).

Day-to-day operations generate multiple types of hazardous wastes that require special handling and proper disposal. These include oils and fuels, cleaning compounds, paints and solvents, and batteries. Hazardous wastes are collected at 21 initial accumulation points; currently none are located at Gunter Annex. These wastes are then transferred to two accumulation sites, Building 910 at Gunter Annex site and Building 1057 at the Main Base. At the Main Base, the waste must be removed by a certified contractor within 90 days for off-base treatment/disposal at an appropriate facility. At the Gunter Annex, the waste must be removed within 180 days. The DRMO, located at the Anniston, Alabama Army Depot, manages the removal and disposal of these wastes (USAF 2004 a, USAF 2004b).

Hazardous waste, except typical limited quantities associated with residential use, is not used, stored, or disposed of at Riverside Heights and Peterson Elementary School. It is not known, however, if hazardous materials and/or wastes were located within these areas prior to 1940. Currently residents are not permitted to repair personally operated vehicles (POVs) on-site, thus potentially limiting the potential for hazardous materials to be located within the area. Activities at Riverside Heights ALA 6-1 and Riverside Heights ALA 6-7 include storage of pesticides, petroleum, oil, and lubricants (POLs), used oil, and shop waste; painting in a fire-rated room; maintenance and fueling of Montgomery Housing Authority vehicles; cleaning and repairing household appliances; and storage of maintenance supplies. These activities limit the use and generation of hazardous materials. Peterson Elementary School has no activities that would warrant the presence of hazardous materials and/or wastes. Historic Peterson Elementary School uses could have generated and/or used hazardous materials and/or wastes (USAF 2004c).

3.3.5.4 Environmental Restoration Program

The ERP (formerly known as the Installation Restoration Program) was implemented by the DoD to identify and evaluate areas and constituents of concern of toxic and hazardous material disposal and spill sites. Once the areas and constituents had been identified, the ERP was tasked to remove the hazards in an environmentally responsible manner. All response actions are based upon provisions of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA) of 1986 as clarified in 1991 by EO 12580, Superfund Implementation.

Maxwell AFB has a total of 32 ERP sites at Maxwell AFB. Nine sites are found within housing areas; four at the Main Base and five at Gunter Annex. Of the sites located in MFH areas, three sites are closed, one site is undergoing corrective action, one site is undergoing long-term monitoring (LTM), one site is undergoing a remedial investigation, two sites are undergoing feasibility studies, and one site requires no additional investigation (USAF 2004a, USAF 2004b, USAF 2004c). Tables 3-5 and 3-6 provide additional information on these ERP sites. None of these sites impact Riverside Heights.

Table 3-5 ERP Sites Located Within Current MFH at Maxwell AFB Main Base

Site ID	Site Name	Regulatory Phase	Description
SD001	Surface Drainage System	Remedial Investigation	The site consists of various non-contiguous areas located across the base where untreated industrial waste (solvents, petroleum, oils, electroplating operation rinse water, unneutralized acid, paint, strippers, and thinners) were discharged from the 1940s through the early 1970s. The drainage system received water from off-base industrial, commercial, and residential properties in the area. Investigation work was conducted at this site from the mid-1980s through 1998. Contamination was not detected above levels of concern for samples collected from the Base Housing Ditch, but low levels of a chlorinated solvent compound were detected in sediment.
ST002	Building 1130 USTs	Closed	This site housed a former fuel station from 1955 until 1967 and included three leaded fuel USTs. The USTs were removed in 1987 and during the removal activities; base personnel observed that no visible signs of potential petroleum contamination was present. Therefore, a No Further Response Action Planned Decision Document was completed in 1996.
SS004	Contaminated Groundwater – External Source	Corrective Action In Progress	This site consists of groundwater contamination that appears to be migrating onto the base from off-base sources and commingling with on-base sources of groundwater contamination. The groundwater contamination has been documented to be found in the 500 Area and possibly Riverside Heights (USAF 2003). Groundwater monitoring wells have been installed in the 500 Area. Contaminants detected in groundwater include chlorinated solvents, POLs, benzene, and pesticides. It has been noted that the possible cause of this groundwater contamination is due to historic industrial operations in the area dating back to the 1930s.
ST009	Building 668 UST	Closed	This site is located in the far northwestern corner of the 600/700 Area. Eight USTs, originally installed in 1937, were taken out of service in 1954 and seven were permanently removed in 1991. The eighth UST was removed in 1992. Soil samples collected during the tank removal indicated total petroleum hydrocarbon concentrations below ADEM action levels. An ADEM letter dated 2 July 1992 officially closed the site under Alabama's UST Program.

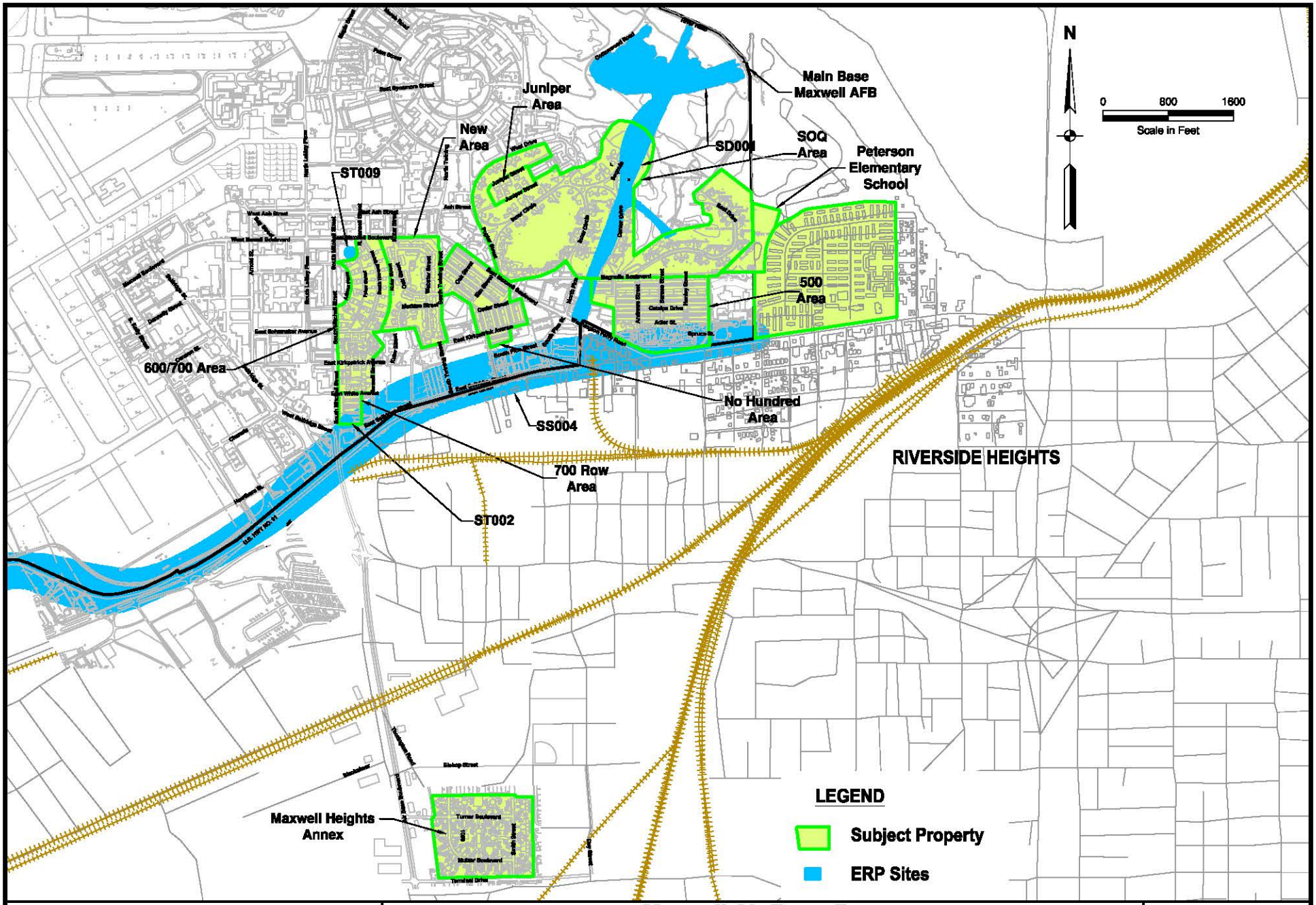
ADEM = Alabama Department of Environmental Management
POL = petroleum, oils, and lubricants
USTs = Underground Storage Tanks

Table 3-6 ERP Sites Located Within Current MFH at Maxwell AFB Gunter Annex

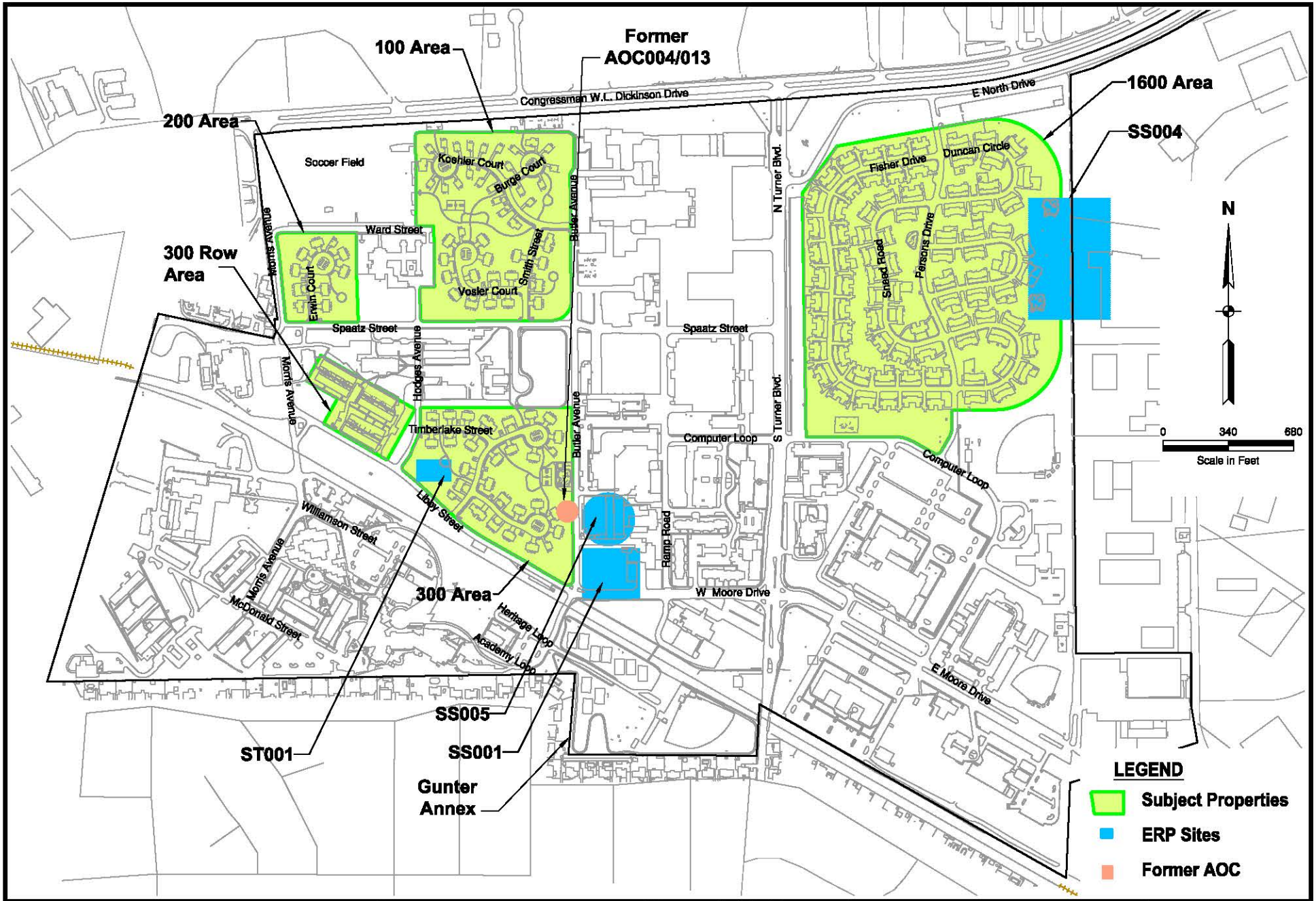
Site ID	Site Name	Regulatory Phase	Description
SS001	Playground Spill Site	FS	This site is located near the 300 Area. This area was the site where storage of aircraft fuels associated with the Aviation Gasoline Distribution System occurred. Six 25,000-gallon USTs, located at this site, were removed in the early 1970s. Based on investigation activities performed at this site, soil and groundwater contamination has been detected, but mostly at concentrations that are below regulatory levels. Three monitoring wells associated with ERP investigation activities have been located within the boundaries of the 300 Area. Groundwater contamination was detected in several of the wells. A risk assessment was performed which indicated that there was no apparent risk due to exposure to soil, but potential risk associated with exposure to groundwater was present. No further action has been recommended for soils at this site. A FS is currently being conducted.
SS005	Print Plant	FS	This site is located near the 300 Area, at the location of Building 847 and 848. The print plant has been in operation since 1948, and during its operation, solvents and gasolines/motor fuels have been used. This site is located immediately north of ERP Site SS001, and investigation activities have been conducted in coordination for both of these sites. Based on investigation activities performed at this site, soil and groundwater contamination has been detected, but mostly at concentrations that are below regulatory levels. A risk assessment was performed which indicated that there was no apparent risk due to exposure to soil, but risk associated with exposure to groundwater was present. Currently a land use restriction prohibiting the installation of potable or irrigation wells has been recommended to avoid the possibility of exposure to contaminated groundwater, and no further action has been recommended for soils at this site. An FS is currently being conducted.
SS004*	Base Housing Area Contaminated Groundwater	LTM	This site is an area of groundwater contamination that is located along the eastern boundary of the 1600 Area and extends within the Gunter Industrial Park. Until 1971, Gunter Industrial Park was part of the Gunter installation and was used as a flightline and for base support activities. In 1971, this part of the Gunter installation was returned to the City of Montgomery. The potential presence of solvents and POLs associated with flight and maintenance activities at this former portion of the base prompted the identification of this site. After 1971, this area housed various industrial activities. The results of the Air Force investigations have indicated that the presence of contamination in soil is below regulatory guidelines, and no further action associated with site soils is warranted. Groundwater contamination appears to be confined to the shallow surficial aquifer, and a single source of contamination appears to be located in Gunter Industrial Park, east of ERP Site SS004 boundaries. A risk assessment was performed for the site and results indicated that contaminant concentrations did not pose a risk to human health and the environment under all current exposure limits. No further remedial action was proposed. Due to active remediation activities occurring at the adjacent facility in Gunter Industrial Park, LTM will continue at this site, until 2 years after the adjacent groundwater recovery system is discontinued.

Site ID	Site Name	Regulatory Phase	Description
ST001	Building 408 USTs	Closed	This site is located at former Building 408. Contamination at this site is due to two diesel and gasoline USTs associated with the Base Motor Pool. The two USTs were removed in 1994, and investigation activities indicated that both soil and groundwater had been affected at this site. Soil remediation was conducted by bioventing, remediation was completed in 1997, and closed under the Alabama UST Program. Groundwater was monitored and was considered part of Operational Unit - 1.
AOC004/ AOC013	Former Auto Hobby Shop	NAIW	This site was located at the former Building 715, within the boundaries of the 300 Area. POLs were used at this building, and an oil/water separator and a used oil UST were reportedly present at this site. Investigation activities indicated that groundwater contamination was below levels of concern, and the site was not added to the ERP. ADEM agreed with the results from the investigation and addressed the results in a letter dated 16 January 2003.

* SS004 is not related or connected to SS004 located at Maxwell AFB Main Base
ADEM = Alabama Department of Environmental Management
AOC = Area of Concern
ERP = Environmental Restoration Program
FS = Feasibility Study
LTM = Long Term Monitoring
POL = petroleum, oils, and lubricants
NAIW = No Additional Investigation Warranted
RI = Remedial Investigation
UST = underground storage tank



Location of ERP Sites in MFH Areas on the Main Base and Riverside Heights	***Maxwell Air Force Base*** Environmental Assessment Military Family Housing Privatization	Figure 3-9 Page 3-30



Location of ERP Sites and AOCs in MFH Areas on Gunter Annex

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Figure 3-10
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3.3.6 Infrastructure and Utilities

3.3.6.1 Potable Water

Drinking water for Maxwell AFB and Riverside Heights is provided by the Montgomery Water Works and Sanitary Sewer Board, and is derived from water supply wells and surface water. The principal regional aquifers in the Montgomery area that provide water for domestic, municipal, and industrial use are the Eutaw, Gordo, and Coker Aquifers. The surface water source in the area is the Tallapoosa River. Water quality from these sources is considered to be good and in compliance with drinking water standards (USAF 2004a, USAF 2004b, and USAF 2004c). According to the Montgomery Water Works and Sanitary Sewer Board's 2004 Consumer Confidence Report, the City's water has a total hardness of 32 parts per million and a pH of 7.9 (MWWSSB 2004).

Maxwell AFB has a water distribution system of over 65 miles of primarily 6-inch water mains, which feed the base at five metered connections. The original system, which feeds the majority of the MFH, was built in the 1920s and is nearing the end of its design life. With the exception of the New Areas (Main Base and Gunter Annex), the majority of the pipes are iron. Water lines in the New Areas are constructed of polyvinyl chloride (USAF 2000). Water lines in Riverside Heights are cast iron (USAF 2004d); these water lines are owned by Montgomery Water Works and Sanitary Sewer Board. One of the lines that supplies water to Maxwell AFB runs through the Riverside Heights property (Daniel 2005b).

Total potable water consumption at Main Base for FY2004 was approximately 451.6 million gallons, while consumption at Gunter Annex was approximately 99.7 million gallons. Of these totals, approximately 75.1 million gallons were consumed at Main Base by families living in MFH and approximately 42 million gallons by families in MFH at Gunter Annex (Garland 2005). Maxwell AFB uses only a minor percentage of the existing utility capacity.

3.3.6.2 Sanitary Sewer

Sanitary sewage from the Main Base currently discharges to a city pumping station (Building 1313 on the Main Base on a Montgomery Water Works and Sanitary Sewer Board easement), and then is pumped north to Montgomery's Towassa Wastewater Treatment Plant. Sanitary sewage from Gunter Annex is pumped to the Econchate Wastewater Treatment Plant southwest of the Gunter Annex (Daniel 2005a). The majority of the collection system at the Main Base was installed in the 1930s and 1940s and was constructed from concrete, clay tile, cast iron, ductile iron, asbestos concrete, and polyvinyl chloride. There are 41 miles of sewer mains on the installation (Main Base and Gunter) and one lift station on the Main Base, which serves a Chapel. About 90 percent of the lines in the SOQ Area are in good condition, as they have been lined and sealed with Insituform (USAF 2000). Piping in the 1600 Area of Gunter Annex was installed in the 1970s and is assumed to be polyvinyl chloride and is expected to be in good condition. Due to the recent construction of the Gunter New Area, it is assumed that the wastewater collection system was replaced with polyvinyl chloride mains during construction. Therefore, these lines are also expected to be in good condition (USAF 2004b). For all other sewer mains servicing the MFH, piping has exceeded or is near its expected design life (USAF 2000). A multiphase project is currently underway to upgrade this system (USAF 2004a). The

Montgomery Water Works and Sanitary Sewer Board does not keep records of sewer discharge volumes but rather they use drinking water usage to reflect sanitary sewer discharge. Assuming that 70 percent of all water consumed becomes wastewater, the Main Base produced approximately 316 million gallons of wastewater in FY04 and Gunter Annex produced approximately 70 million gallons. Of these totals, approximately 52.6 million gallons were generated at Main Base by families living in MFH and approximately 29.4 million gallons by families in MFH at Gunter Annex (Garland 2005). Maxwell AFB uses only a minor percentage of the existing utility capacity.

According to construction diagrams of Riverside Heights, existing sanitary sewer lines were constructed from cast iron (USWD 1940). These lines were installed around the same time that the existing structures on Riverside Heights were constructed and no major renovations or replacements are known to have occurred. It is likely that these lines are beyond their expected design life. Previously, at least one sanitary sewer line was discovered to be cross-connected to a storm sewer drain. However, this situation was repaired at the site of the discovery. It is possible that there are other instances of a cross-connection between the sewer system and storm drains that could be adversely impacting the Alabama River (USAF 2004c). Some City of Montgomery properties located outside of Riverside Heights use the existing sewer lines at Riverside Heights to transport their wastewater to the Towassa Wastewater Treatment Plant.

3.3.6.3 Solid Waste

Municipal solid waste management and compliance at Air Force installations are established in AFI 32-7042, Solid and Hazardous Waste Compliance. AFI 32-7042 incorporates by reference the requirements of RCRA Subtitle D, 40 CFR 240 through 244, 257, and 258, and all other applicable federal regulations, AFIs, and DoD directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record keeping and reporting; and recycling of solid waste, as addressed in AFI 32-7080, Pollution Prevention Program. All municipal solid waste generated at Maxwell AFB is managed by Air Force contractors and subsequently disposed of at the North Montgomery landfill. Residential solid waste generated in MFH is removed by a contractor for disposal at the North Montgomery landfill (USAF 2004a). Additionally, recycling is encouraged at Maxwell AFB and recyclable materials are collected and transported to an off-base recycling center by a private contractor (USAF 2000). Maxwell AFB disposed of 5,639.92 tons of solid waste in FY2003, including 1342.94 tons from MFH (Stanford 2004b).

Municipal and residential solid waste generated at Riverside Heights is collected by the City of Montgomery and disposed of at the North Montgomery landfill.

Approximately 319,000 tons of solid waste are disposed of per year in the sanitary waste area of the North Montgomery landfill (Manasco 2005). The landfill can also accept construction and demolition (C&D) wastes, which are disposed of in the C&D area of the landfill. Approximately 110,000 tons of C&D waste are disposed per year in this landfill. The sanitary area of the landfill has a remaining life span of 30 years with no room for expansion. The C&D landfill has a 20-year remaining life span with the possibility of utilizing an additional 40 acres adjacent to the existing site.

3.3.6.4 Drainage

Stormwater runoff at Maxwell AFB is drained by overland flow to diversion structures, including inverts, stormwater channels, and oil/water separators that discharge to the Alabama River. The base has a high volume of stormwater runoff due to the predominance of impermeable surfaces (USAF 2004d). The base has a NPDES permit, which requires sampling at the seven permitted stormwater outfall sites. The NPDES permit also requires the base to have a Best Management Plan, which provides for the implementation of sediment and erosion controls, spill containment devices, sluice gates, and regular monitoring and sampling. These practices help to minimize the potential of pollutants entering stormwater runoff from industrial, maintenance, and construction sites (USAF 2000). Stormwater drains at Maxwell AFB are owned and maintained by the City of Montgomery.

Should a spill or release resulting in contamination of the stormwater system occur, a valve-operated control system is in place that can isolate/contain the pollutant within the collection system. This will prevent the contaminant from reaching a discharge point (USAF 2004d).

Riverside Heights does not maintain any records related to its stormwater system. The only known repairs to the stormwater system were the efforts to disconnect the sewer line from the stormwater line (see Section 3.3.6.1) (USAF 2004c).

3.3.6.5 Transportation

Maxwell Main Base is located approximately 1 mile west of Interstate 65 and is connected to the interstate system by Day Street and Bell Street. There are three entrance gates to the Main Base: Day Street Gate, Bell Street Gate, and Kelly Street Gate. The Bell Street Gate is the main gate. The most recent traffic study of the area occurred in 1985. Gunter Annex is located approximately 5 miles east of the Main Base in northcentral Montgomery and is accessed by Congressman Dickenson Highway. The on-base system of roads includes a network of primary, secondary, and local streets. Approximately 40 percent of the roads are in good to excellent condition and 60 percent are classified as fair to poor condition. Roads in some areas are of the original 1930s concrete construction. Also, past road construction has included the use of asphalt surfacing directly on expansive clay without subbase, resulting in severely deteriorated surfaces (USAF 2000).

During peak traffic times, some access streets near the base become congested, particularly along Bell and Day Streets near the base gates. The street system handles the traffic well during non-peak times (USAF 2000).

Riverside Heights is located off of Bell Street and adjacent to Maxwell AFB. The area contains a network of roads to allow access to the existing housing units. A traffic study of the area has not been conducted; however, it does not appear that these roads become congested with traffic. Peterson Elementary School is located on Pendar Street and is also adjacent to Maxwell AFB. Other than Pendar Street and the school parking lot, there is no other transportation system in place at Peterson Elementary School.

3.3.6.6 Electricity/Natural Gas

Electricity is provided to Maxwell AFB and Riverside Heights by Alabama Power, and natural gas is supplied by the Alabama Gas Company (USAF 2004a, USAF 2004b, and USAF 2004c). Electrical consumption on the Main Base for calendar year 2003 was approximately 105,919,586 kilowatt hours (kwh), while consumption for MFH on Main Base was approximately 4,746,172 kwh. Electrical consumption on Gunter Annex for calendar year 2003 was approximately 53,707,557 kwh, while consumption for MFH on Gunter Annex was approximately 2,968,054 kwh. Approximate consumption of natural gas at Main Base was 282,307 thousand cubic feet (kcf) for calendar year 2003, while consumption by MFH units on Main Base was approximately 44,427 kcf. Approximate consumption of natural gas at Gunter Annex during calendar year 2003 was approximately 102,277 kcf, while consumptions by MFH units on Gunter Annex during the same time period was approximately 22,982 kcf (Stanford 2004b). Maxwell AFB uses only a minor percentage of the existing utility capacity.

3.3.7 Socioeconomic Resources

Maxwell AFB is located in the City of Montgomery, the state capital of Alabama, and is contained within Montgomery County. The socioeconomic status of Maxwell AFB, the City of Montgomery, and the region are addressed in this section. The scope of this section includes population, housing, education, and economic activity.

3.3.7.1 Population

According to the U.S. Census Bureau (USCB), the 2000 population for the City of Montgomery was 201,568, with an estimated population for Montgomery County of 223, 510 (USCB 2000a). The average family size was 3.06 in 2000 (USCB 2000a). The Montgomery MSA includes Autauga, Elmore, Lowndes, and Montgomery Counties, and had an estimated population of 320,000 in 131,000 households in 2002 (USCB 2002). The City of Montgomery Action Plan indicates that population growth in the MSA is expected to grow by more than 55,000 people over the next 15 years, or 23,400 new households. In Montgomery County alone, growth by 12,200 households containing a population of 28,200 residents is expected over the same period (City of Montgomery 2004).

Based on the 2003 Maxwell AFB Economic Information, there are 1,127 military personnel living on-base (16.9 percent) and 5,559 living off-base (83.1 percent). There are 1,216 active duty military dependents living on-base (1.07 dependents per person), and 3,657 off-base military dependents (0.65 dependents per person) (Maxwell AFB 2003a).

3.3.7.2 Housing

The Maxwell AFB Housing Requirements and Market Analysis (HRMA) defines the "Housing Market Area boundary" as covering a 60-minute or 20-mile commute, which includes most of Montgomery, Elmore, Autauga, and Lowndes counties, as well as portions of Bibb, Coosa, Tallapoosa, Macon, Bullock, Crenshaw, Butler, Dallas, Wilcox, Lee, Barbour and Chilton counties. The bulk of Maxwell AFB military personnel live in the City of Montgomery (50 percent of personnel), while the remaining base staff primarily reside in the neighboring cities of Millbrook and Prattville (Maxwell AFB 2003b). According to the HRMA, Maxwell

AFB is responsible for supporting 4,629 military personnel, including both Air Force and tenant personnel, which is projected to decrease to 4,619 by 2008 (Maxwell AFB 2003b).

According to the HRMA, the 2003 rental vacancy rate in the Housing Market Area is 11.4 percent, and the projected rental vacancy rate for 2008 is 10.8 percent (Maxwell AFB 2003b).

In an effort to provide adequate housing for families in Riverside Heights, the Montgomery Housing Authority is considering selling Riverside Heights to the City of Montgomery as part of a plan to help fund the development of improved housing for public housing residents. Proceeds from the sale of the property would be used to construct new homes for Riverside Heights residents. In a separate action, the Air Force plans to acquire the property from the City. The Montgomery Riverfront and Downtown Master Plan indicates that Riverside Heights in West Montgomery would either become housing for Maxwell AFB or a mixed income community housing, costs of which would be determined in conjunction with Montgomery Housing Authority (The Facility Group, et al. 2001).

3.3.7.3 Education

For personnel who live in permanent quarters on Maxwell AFB, their children (or children who they sponsor), may attend Maxwell Elementary School. Maxwell Elementary has an enrollment of 458 students, with a capacity of 700 (WESTON 2005).

The following public schools are located in the vicinity of Maxwell Main Base (National Center for Educational Statistics 2005):

- Peterson Elementary School - Enrollment: 203
- McIntyre Junior High School - Enrollment: 552
- G. W. Carver Senior High School - Enrollment: 1309

The following public schools are located in the vicinity of Gunter Annex (National Center for Educational Statistics 2005):

- Dalraida Elementary School - Enrollment: 567
- Lee High School - Enrollment: 1534
- Goodwyn Jr. High School - Enrollment: 775

In addition to the public schools listed above, Montgomery has more than 30 private primary and/or secondary schools. There are also a number of colleges and universities in Montgomery, with a variety of academic disciplines as well as state technical colleges and private vocational schools (Maxwell AFB 2005).

3.3.7.4 Economy

Maxwell AFB Economic Activity and Contribution. Maxwell AFB generates economic activity in the region through employee payrolls, local procurements, and other expenditures. Annual payroll for military personnel living on-base is $31.6 million and $165.3 million for those living off-base. The total annual payroll, for both military and civilians, is $608.3 million. Annual expenditures for construction, services, and procurement of materials, equipment, and supplies (not including contracts for services for other Air Force installations) are $862.9 million. Of that amount, $6.2 million is for military family housing and $78.2 million is for installation operation and maintenance. The number of base jobs created on the installation, including both military and civilian, is 12,695, and other jobs created indirectly is calculated to be 4,424, resulting in $128.8 million in value (salary for jobs created, at an average salary of $29,124). Thus, the cumulative annual economic impact is estimated to be $1.6 billion (payroll is 38 percent, expenditures are 54 percent and estimated value of jobs created is 8 percent) (Maxwell AFB 2003a).

Regional Employment and Income. The per capita personal income in Montgomery, Alabama, was $26,571 in 2001 and $27,533 in 2002. From 1997 to 2002, per capita personal income in Montgomery ranged from 11 to 15 percent lower than the United States average, with an average difference of 13 percent over the 6 years (U.S. Department of Labor 2003). From 1995-2000, Montgomery County employment increased by 1.3 percent per year, which is lower than the state average for that period (1.4 percent) and the U.S. average (2.3 percent) (Maxwell AFB 2003b). In the Montgomery MSA, the leading industries in 2002 were educational, health, and social services (19 percent), retail trade (16 percent), professional and business services (11 percent), manufacturing (10 percent), and public administration (9 percent). Twenty-one percent of the population work for federal, state, or local government (USCB 2002).

3.3.8 Environmental Justice

3.3.8.1 Background

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, provides that "each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." In an accompanying Presidential memorandum, the President specified that federal agencies shall analyze the environmental effects of their proposed actions on minority and low-income communities, including human health, economic, and social effects when such analysis is required by NEPA.

This section presents relevant Maxwell AFB and Riverside Heights data regarding environmental justice, along with an analysis of census reporting areas that would be affected by the proposed and alternative actions. This analysis follows the Air Force Interim Guidance for Environmental Justice Analysis, November 1997, and the Council on Environmental Quality Environmental Justice Guidance under NEPA, December 1997.

3.3.8.2 Minority and Low-Income Populations

In order to determine if minority and low-income populations are disproportionately impacted by the project, two areas of comparison must first be determined: the potentially affected area, or "impact footprint," and the larger regional area that includes the affected area and serves as a community of comparison (COC). The impact footprint is the geographic area that would be adversely affected by a proposed project. The impact footprint for this environmental justice analysis contains census tract 9 (Maxwell Main Base), census tract 10 (includes Riverside Heights) and census tract 53.01 (Gunter Annex). The larger regional area, which also includes the impact footprint and will be used as the community of comparison under this analysis, is the City of Montgomery.

Riverside Heights is owned by the Montgomery Housing Authority and is used for public housing. The public housing units were constructed in 1937 and 1941, and have received no major improvements since that time. There are 647 housing units in the development, of which 392 are occupied and 255 units are vacant. In December 2004, Montgomery Housing Authority's board of commissioners voted to allow the City of Montgomery to buy the Riverside Heights property and relocate residents as part of a plan to help fund the development of improved housing for public housing residents. In a separate action, the Air Force plans to acquire the property from the City. It is not known at this time whether the Air Force would acquire Riverside Heights along with the vacant structures, or if the property would be acquired after removal of the structures by the City. As a result, both scenarios are considered, with prior City demolition of structures in the Proposed Action and no prior demolition considered in Alternative 3 (see Chapter 2).

Census 2000 data will be used for this analysis as it is the most recent and complete data available. The 2000 Census of Population and Housing includes data on race and ethnicity and poverty status. Based on Census Bureau definitions, the minority population for purposes of this analysis includes Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; and Some Other Race. For the 2000 Census, race and Hispanic origin (ethnicity) were considered two separate concepts and were recorded separately. For the purposes of this analysis, the total race minority population will be added to the total Hispanic population to determine total minority population of the affected areas.

Low-income persons are defined as persons with 1999 incomes below the poverty level. The 2000 Census defined the poverty level as income below $16,895 for a family of four, with two related children under the age of eighteen.

Based upon the 2000 Census Population and Housing data, census tracts 9, 10, and 53.01, respectively had minority populations of 40.4 percent, 89.4 percent, and 54.9 percent, and low-income populations of 2.8 percent, 65.8 percent, and 3.7 percent. In comparison, the COC (City of Montgomery) had a minority population of 52.8 percent and a low-income population of 17.7 percent. Table 3-7 summarizes census data on minority and low-income populations for census tracts 9, 10, 53.01, and the City of Montgomery (COC). Additional information is provided for Montgomery County, the State of Alabama, and the United States. For the purposes of this analysis, data for the above census tracts and the City of Montgomery will be used for comparison purposes.

Table 3-7 Percent Minority Population and Low-Income Population

Demographic Area	Total Population	Total Minority Population	Percent Minority	All Income Levels	Total Low-Income Population	Percent Low Income
Census Tract 9	5,786	2,335	40.4%	1,958	55	2.8%
Census Tract 10	4,024	3,599	89.4%	4,011	2,638	65.8%
Census Tract 53.01	881	484	54.9%	680	25	3.7%
City of Montgomery	201,609	106,477	52.8%	192,033	34,073	17.7%
Montgomery County	223,510	115,652	51.7%	212,277	36,809	17.3%
State of Alabama	4,447,100	1,320,061	29.7%	4,334,919	698,097	16.1%
United States	281,421,906	86,907,766	30.9%	273,882,232	33,899,812	12.4%

All income levels includes everyone except those in institutions, military group quarters, and college dormitories, and unrelated individuals under 15 years old.
Source: USCB 2000b

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Chapter 4

Environmental Consequences

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter describes the potential environmental impacts that are likely to occur as a result of implementation of the proposed or alternative actions. The No Action Alternative provides a baseline against which the impacts of the proposed and alternative actions can be compared. A discussion of mitigation measures is included as necessary. Any resultant irreversible or irretrievable commitments are noted. Criteria and assumptions used to evaluate potential impacts are discussed at the beginning of each section.

4.2 CHANGE IN CURRENT MISSION

The activities associated with implementation of the proposed or alternative actions would not change the current mission of the installation. Privatization of MFH at Maxwell AFB would continue to support the current and future mission of the installation.

4.3 DESCRIPTION OF THE EFFECTS OF ALL ALTERNATIVES ON THE AFFECTED ENVIRONMENT

4.3.1 Noise

When evaluating noise effects, several aspects were examined, including: 1) the degree to which noise levels generated by construction, demolition, and renovation activities were higher than the ambient noise levels; 2) the degree to which there is hearing loss and/or annoyance; and 3) the proximity of noise-sensitive receptors (i.e., residences) to the noise source. An environmental analysis of noise includes the potential effects on the local population. Such an analysis estimates the extent and magnitude of the noise generated by the proposed or alternative actions. To best evaluate the noise effects resulting from the Proposed Action or its alternatives, it was assumed that construction and demolition activities would produce higher noise levels than those associated with renovation (minor repairs, general maintenance, or upgrade of existing conditions).

An action would have a significant effect if it would produce noise levels high enough to cause residents or construction workers to suffer permanent hearing loss, would create an unacceptable living condition for residents, or would alter the 65 dBA DNL contours on the base. As noted in Section 3.3.1.1 (Noise), noise associated with construction activities does not typically generate a predicted noise exposure of 65 dBA DNL or greater. The primary source of ambient noise modeled by the Air Force is from aircraft operations, which tends to mask noise from construction activities. Since the contribution to the DNL by construction-related noise would be minimal (<64 dBA DNL) and the noise source would not be located close to the existing 65 dBA DNL contour, neither the Proposed Action nor any of its alternatives would alter the existing 65 dBA DNL contour. Therefore, a detailed analysis of construction noise was not performed. In addition, adherence to standard Air Force Occupational Safety and OSHA regulations minimize

the risk of hearing loss to construction workers. These regulations require hearing protection along with other PPE and safety training.

4.3.1.1 Proposed Action

The Proposed Action would require demolition of 296 housing units, construction of 196 units, complete (whole house) renovation of 157 units, and minor renovations on 234 units on the Main Base and Gunter Annex, as well as the construction of 114 units at Riverside Heights. The majority of construction and demolition activities would occur on the Main Base, while the majority of the renovation activities would be at Gunter Annex.

The primary source of noise would result from construction and demolition activities, which would be generated by heavy equipment and vehicles involved in demolition, site preparation, foundation preparation, construction, and finishing work. There is a possibility of short-term, localized speech interference or annoyance near construction zones. Noise-sensitive receptors would only be exposed to construction noise intermittently; therefore, extended disruption of normal activities is not anticipated.

4.3.1.2 Alternative 1

For Alternative 1, the total number of units built is identical to the Proposed Action but the location of the new units is altered. The number of units constructed at the Main Base would increase by 2.2 times (i.e., from 95 to 209 units). Furthermore, 67 percent of new construction would be concentrated on the Main Base, compared to only 31 percent of new construction occurring in this area under the Proposed Action. One of the primary reasons for the increased number of housing units at the Main Base and Gunter Annex is that the Riverside Heights area would not be acquired for this alternative, and to compensate, all the units planned for Riverside Heights would be built on the Main Base instead.

With increased construction activity, there is likely to be an increase in short-term noise exposure for residents living in MFH on the Main Base and its vicinity compared to the Proposed Action. The elevated noise levels could result from either additional construction workers or more equipment being used during a similar period of time or construction lasting over a longer duration. Nevertheless, increase in construction proposed in Alternative 1 would have effects similar to those described in the Proposed Action.

4.3.1.3 Alternative 2

Compared to the Proposed Action, Alternative 2 requires increased levels of demolition and construction and decreased levels of renovation to existing units. On the Main Base, the number of newly constructed units would increase nearly 2.5 times (95 to 231 units), while the number of units built on Gunter Annex would be nearly four times greater (101 to 393 units). Additionally, the number of units demolished would increase by 1.4 times on the Main Base (203 to 286 units) and by nearly 3.5 times at Gunter Annex (93 to 324 units). The primary reason for this increase in construction activity is that Alternative 2 does not include the acquisition of the Riverside Heights area. The amount of short-term noise generated on the Main Base and Gunter Annex is

likely to increase as a result of Alternative 2, compared to Alternative 1 or the Proposed Action, with Gunter Annex experiencing the greatest addition of noise.

4.3.1.4 Alternative 3

Alternative 3 proposes a reduction in the amount of renovation done to the existing units and an increase in the number of units constructed and demolished, exceeding that of the Proposed Action as well as Alternatives 1 and 2. Implementation of Alternative 3 would result in the base's housing requirements increasing by 149 units. The number of units demolished would increase by 1.4 times on the Main Base (203 to 286 units) and by nearly 3.5 times at Gunter Annex (93 to 324 units). The number of units constructed on the Main Base would increase by 1.7 times (95 to 163 units), while the number of units being built on Gunter Annex would increase by almost 4 times (101 to 393 units). For this alternative, the Riverside Heights property would be acquired and nearly 44 percent of the total units demolished and 28 percent of the units constructed would occur on this parcel of land.

The implementation of Alternative 3 would likely result in a short-term increase in noise levels, compared to the Proposed Action, for the Main Base, Gunter Annex, and Riverside Heights; Gunter Annex would experience the greatest addition of noise.

4.3.1.5 No Action Alternative

Under the No Action Alternative, the status quo would remain for renovations and periodic repairs on the existing 784 MFH units at the Main Base and Gunter Annex. There would be no change in noise levels from baseline conditions.

4.3.1.6 Mitigative Actions

Though the effects from construction noise are considered minimal, there are several best management practices that can be employed to further reduce its effect on residential areas. One suggestion is to restrict the operation of extremely noisy equipment (e.g., brick cutters or jackhammers) before 9 a.m and after 5 p.m.. Additionally, properly operating and maintained equipment (e.g., possessing mufflers, gaskets, and sharpened and lubricated blades), maximizing the distance of loud equipment from a residence, directing construction vehicles to use less noise-sensitive routes, fitting silencers to combustion engines, tightly fastening machinery covers or panels, isolating vibrating parts/damping, constructing sound barriers to reduce propagation, or shutting off/idling machinery between work periods are other suggestions to reduce construction-associated noises and disturbances (Eaton 2000; Suter 2002; Tempest 1985).

4.3.2 Air Quality

The following factors were considered in evaluating air quality: (1) the short- and long-term air emissions generated from renovation, construction, and demolition activities; (2) the type of emissions generated; and (3) the potential for emissions to result in ambient air concentrations that exceed any of the NAAQS or State Implementation Plan (SIP) requirements. The air pollutant emission calculations included in the sections below are detailed in Appendix C.

4.3.2.1 Proposed Action

The Proposed Action would result in short-term emissions during renovation, construction, and demolition of homes and associated infrastructure, principally from site clearing/preparation activities and the use of construction equipment and related vehicles. There would be no or a negligible increase in long-term emissions because it is assumed that POV use would remain relatively the same and new boiler and generators associated with the housing would be comparable to those already in use.

The combustion of fuel by the construction equipment and related vehicles involved in the Proposed Action would cause an increase in CO, VOC, NOx, SO_2, and PM_{10} and $PM_{2.5}$. Fugitive dust would be created by the construction equipment as it disturbs soils.

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked on and the level of construction activity. The USEPA has estimated that uncontrolled fugitive dust emissions from ground-disturbing activities would be emitted at a rate of 80 lb of total suspended particulate (TSP) per acre per day of disturbance (USEPA 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM_{10} emissions from various open dust sources were determined based on the ratio of PM_{10} to TSP sampling data. The average PM_{10} to TSP ratios for topsoil removal, aggregate hauling, and cut and fill operations are reported as 0.27, 0.23, and 0.22, respectively (USEPA 1988). Using 0.24 as the average ratio for purposes of analysis, the emission factor for PM_{10} dust emissions becomes 19.2 lb per acre per day of disturbance. Because $PM_{2.5}$ emissions factors have not been developed for all operations, it is conservatively assumed that $PM_{2.5}$ emissions are equivalent to PM_{10} emissions. The emissions presented in Table 4-1 include the estimated annual PM_{10} and $PM_{2.5}$ emissions associated with the uncontrolled fugitive dust emissions from the renovation, construction, and demolition sites. Emissions from infrastructure improvements are also included. These emissions would produce slightly elevated short-term PM_{10} ambient air concentrations. The USEPA estimates that the effects of fugitive dust from construction activities would be reduced significantly with an effective watering program. Watering the disturbed area of the construction site twice per day with approximately 3,500 gallons per acre per day would reduce TSP emissions as much as 50 percent (USEPA 1995). The effects from fugitive dust would last only as long as the duration of construction activity, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Specific information describing the types of construction equipment required for a task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established cost estimating methodologies for construction and experience with similar types of construction projects (Means 1996). Combustive emissions from construction equipment exhaust were estimated by using USEPA-approved emissions factors for heavy-duty diesel-powered construction equipment (USEPA 2000) along with the emission factors for the estimated types and numbers of equipment expected to be used during construction. These emissions are included in Table 4-1. As with fugitive dust emissions, construction emissions would produce slightly elevated air pollutant concentrations. However, the effects from construction activities would last only as

long as the duration of construction activity, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Under the Proposed Action it has been estimated that construction (2,606 sq ft) of each new home site would take approximately 90 days, renovation (1,860 sq ft) and demolition (1,575 sq ft) of each existing home site would take approximately 30 days. The unit square footage for construction, renovation and demolition was estimated using the number of units and square footage presented in Tables 2-2 and 2-3. It was assumed that infrastructure activities would include 1 mile of 25-ft-wide asphalt road; 5,000 sq ft of half-gravel and half-concrete playground; one-quarter mile of 10-ft-wide concrete jogging track; and 1 mile of concrete drainage improvements. It was estimated that the time to complete infrastructure activities would be approximately 365 days spread equally over the span of the project (4 years).

Review of emissions from the Proposed Action in Table 4-1 indicates that the greatest percentage of impact to the local emissions in a given year during the project would be $PM_{2.5}$ (10.7 tpy increase) at 0.15 percent from the combined renovation, construction, and demolition operations during the initial phase of the project. The emissions would be temporary and would be eliminated after the activity is completed. The emissions from the scheduled future renovations of all MFH units are much less than those of the demolition, construction, and renovation of the present MFH. All emissions would fall well below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. A regionally significant action determination is not required for the Montgomery MSA because it is an attainment area. It has been included in Table 4-1 to show that the emissions from the Proposed Action would be regionally insignificant even if the Montgomery MSA was a nonattainment or maintenance area.

The short-term emissions from the Proposed Action would not cause ambient concentrations to exceed the NAAQS or limits that would be set in a specific SIP. The emission of minor amounts of air pollution would be unavoidable; however, the individual and cumulative impacts during renovation, construction, and demolition would have little impact when compared to the 2002 Montgomery MSA emissions.

4.3.2.2 Alternative 1

Emissions for Alternative 1 are summarized in Table 4-1 and are similar to those of the Proposed Action. Under Alternative 1 it has been estimated that construction (2,610 sq ft) of each new home site would take approximately 90 days, renovation (1,860 sq ft) and demolition (1,575 sq ft) of each existing home site would take approximately 30 days. The unit square footage for construction, renovation, and demolition was estimated using the number of units and square footage presented in Tables 2-4 and 2-5. It was assumed that infrastructure activities would include 1 mile of 25-ft-wide asphalt road; 5,000 sq ft of half-gravel and half-concrete playground; one-quarter mile of 10-ft-wide concrete jogging track; and 1 mile of concrete drainage improvements. It was estimated that the time to complete infrastructure activities would be approximately 365 days spread equally over the life span of the project (4 years).

Review of emissions from Alternative 1 in Table 4-1 indicates that the greatest percentage of impact to the local emissions in a given year during the project would be $PM_{2.5}$ (10.7 tpy) at 0.15 percent from the combined renovation, construction, and demolition operations during the initial phase of the project. The emissions would be temporary and would be eliminated after the activity is completed. The emissions from the scheduled future renovations of all MFH units are much less than those of the demolition, construction, and renovation of the present MFH. All emissions would fall well below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. A regionally significant action determination is not required for the Montgomery MSA because it is an attainment area. It has been included in Table 4-1 to show that the emissions from Alternative 1 would be regionally insignificant even if the Montgomery MSA was a nonattainment or maintenance area.

The short-term emissions from Alternative 1 would not cause ambient concentrations to exceed the NAAQS or limits that would be set in a specific SIP. The emission of minor amounts of air pollution would be unavoidable; however, the individual and cumulative impacts during renovation, construction, and demolition would have little impact when compared to the 2002 Montgomery MSA emissions.

4.3.2.3 Alternative 2

Emissions for Alternative 2 are summarized in Table 4-1 and would occur as a result of similar renovation, construction, and demolition and operational activities as the Proposed Action. However, Alternative 2 would have increased demolition and construction activities compared to the Proposed Action and Alternative 1.

Under Alternative 2 it has been estimated that construction (2,374 sq ft) of each new home site would take approximately 90 days, renovation (1,860 sq ft) and demolition (1,588 sq ft) of each existing home site would take approximately 30 days. The unit square footage for construction, renovation, and demolition was estimated using the number of units and square footage presented in Tables 2-6 and 2-7. It was assumed that infrastructure activities would include 1 mile of 25-ft-wide asphalt road; 5,000 sq ft of half-gravel and half-concrete playground; one-quarter mile of 10-ft-wide concrete jogging track; and 1 mile of concrete drainage improvements. It was estimated that the time to complete infrastructure activities would be approximately 365 days spread equally over the life span of the project (4 years).

Review of emissions from Alternative 2 in Table 4-1 indicates that the greatest percentage of impact to the local emissions in a given year during the project would be $PM_{2.5}$ (16.6 tpy) at 0.23 percent from the combined renovation, construction, and demolition operations during the initial phase of the project. The emissions would be temporary and would be eliminated after the activity is completed. The emissions from the scheduled future renovations of all MFH units are much less than those of the demolition, construction, and renovation of the present MFH. All emissions would fall well below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. A regionally significant action determination is not required for the Montgomery MSA because it is an attainment area. It has been included in

Table 4-1 to show that the emissions from Alternative 2 would be regionally insignificant even if the Montgomery MSA was a nonattainment or maintenance area.

The short-term emissions from Alternative 2 would not cause ambient concentrations to exceed the NAAQS or limits that would be set in a specific SIP. The emission of minor amounts of air pollution would be unavoidable; however, the individual and cumulative impacts during renovation, construction, and demolition would have little impact when compared to the 2002 Montgomery MSA emissions.

4.3.2.4 Alternative 3

Emissions for Alternative 3 are summarized in Table 4-1 and would occur as a result of similar renovation, construction, and demolition and operational activities as the Proposed Action. However, Alternative 3 would include the maximum amount of demolition and construction, including demolition of structures at Riverside Heights.

Under Alternative 3 it has been estimated that construction (2,401 sq ft) of each new home site would take approximately 90 days, and renovation (1,882 sq ft) and demolition (1,357 fq ft) of each existing home site would take approximately 30 days. The unit square footage for construction, renovation, and demolition was estimated using the number of units and square footage presented in Tables 2-8 and 2-9. It was assumed that infrastructure activities would include 2 miles of 25-ft-wide asphalt road; 10,000 sq ft of half-gravel and half-concrete playground; one-quarter mile of 10-ft-wide concrete jogging track; and 2 miles of concrete drainage improvements. It was estimated that the time to complete infrastructure activities would be approximately 365 days spread equally over the life span of the project (4 years).

Review of emissions from Alternative 3 in Table 4-1 indicates that the greatest percentage of impact to the local emissions in a given year during the project would be $PM_{2.5}$ (23.8 tpy) at 0.33 percent from the combined renovation, construction, and demolition operations during the initial phase of the project. The emissions would be temporary and would be eliminated after the activity is completed. The emissions from the scheduled future renovations of all MFH units are much less than those of the demolition, construction and renovation of the present MFH. All emissions would fall well below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. A regionally significant action determination is not required for the Montgomery MSA because it is an attainment area. It has been included in Table 4-1 to show that the emissions from Alternative 3 would be regionally insignificant even if the Montgomery MSA was a nonattainment or maintenance area.

The short-term emissions from Alternative 3 would not cause ambient concentrations to exceed the NAAQS or limits that would be set in a specific SIP. The emission of minor amounts of air pollution would be unavoidable; however, the individual and cumulative impacts during renovation, construction, and demolition would have little impact when compared to the 2002 Montgomery MSA emissions.

Table 4-1 Expected Emissions per Construction Year

Criteria Air Pollutant	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$
Proposed Action (tpy)	11.2	3.3	25.6	2.7	10.7	10.7
Percent of Regional Emissions	0.008	0.014	0.12	0.049	0.045	0.15
Alternative 1 (tpy)	11.2	3.3	25.6	2.7	10.7	10.7
Percent of Regional Emissions	0.008	0.014	0.12	0.049	0.045	0.15
Alternative 2 (tpy)	19.9	4.8	45.7	4.9	16.6	16.6
Percent of Regional Emissions	0.014	0.020	0.22	0.089	0.070	0.23
Alternative 3 (tpy)	25.5	7.2	58.7	6.3	23.8	23.8
Percent of Regional Emissions	0.018	0.030	0.29	0.11	0.10	0.33
No Action Alternative (tpy)	0.00	0.00	0.00	0.00	0.00	0.00
Percent of Regional Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Future Renovations in Proposed Action and Alternatives 1 and 2 (tpy)[a]	3.0	0.52	6.8	0.72	2.9	2.9
Future Renovations in Alternative 3 (tpy)[b]	3.6	0.62	8.1	0.87	3.5	3.5
2002 Montgomery MSA Emissions (tpy)[c]	145,548	24,336	20,558	5,505	23,796	7,118

MSA=Metropolitan Statistical Area
CO=carbon monoxide
NO_x=nitrogen oxides
$PM_{2.5}$=particulate matter equal or less than 2.5 micrometers in diameter
PM_{10}=particulate matter equal or less than 10 micrometers in diameter
SOx=sulfur oxides
tpy - tons per year
VOC=volatile organic compound
[a] Renovations to occur 25 years in the future.
[b] Renovations to occur 25 years in the future.
[c] Draft TriCounty (Autauga, Elmore, and Montgomery) emission totals. Source: ADEM (Cole 2005).

4.3.2.5 No Action Alternative

Under the No Action Alternative, there would be no change in the Maxwell AFB emissions described in Section 3.3.2.

4.3.2.6 Mitigative Actions

Little impacts to local air quality would be expected from the proposed and alternative actions associated with the MFH privatization at Maxwell AFB. Therefore, no mitigative actions would be required. Best management practices would include watering the disturbed area of the construction site twice per day with approximately 3,500 gallons per acre per day, which would reduce TSP emissions as much as 50 percent.

4.3.3 Water Resources

Impacts to surface water and groundwater resulting from the proposed or alternative actions may occur if project activities resulted in:

- Surface water quality declining such that the existing surface water quality standards would be violated,
- An increase in water usage from the underlying aquifer so that the usage had an impact on the aquifer.

4.3.3.1 Surface Water

4.3.3.1.1 Proposed Action

The Proposed Action consists of demolition, shallow excavation, construction, and renovations. The potential for increased sediment loading of surface water during the initial demolition and construction activities is the most likely impact associated with the Proposed Action. This potential is short-term and is manageable through implementation of a SWPPP along with the incorporation of best management practices for sediment control during construction. Implementation of these actions would minimize potential water quality problems. Further details regarding the SWPPP can be found in Section 4.3.6.4.

Following completion of the project the impervious cover at Maxwell Main Base and Gunter Annex is anticipated to remain essentially unchanged. There would be a possible increase to the overall impermeable surface within the Riverside Heights area due to new housing construction on what is planned as a nearly vacant parcel at the time of Air Force acquisition. However, with the inclusion of upgraded storm sewer drains along with grading and surface improvements, the overall condition of surface waters would likely be enhanced by the implementation of the Proposed Action. Completion of the Proposed Action would have no long-term adverse impacts on surface water quality or quantity on Maxwell AFB, Riverside Heights, or downstream surface water bodies.

Because final designs for the Proposed Action would involve the disturbance of more than 1 acre, an NOI under the general Alabama stormwater discharge permit would need to be filed with the ADEM.

4.3.3.1.2 Alternative 1

Under Alternative 1, anticipated impacts would be nearly identical to those described for the Proposed Action except impacts associated with excavation and new housing construction in the Riverside Heights area. Because this alternative does not include acquisition of the Riverside Heights area, no impacts from excavation or construction at that location would occur. Surface water quality would otherwise be as described for the Proposed Action. Implementation of this alternative would not have long-term adverse impacts on surface water quality or quantity on Maxwell AFB, Riverside Heights, or downstream surface water bodies.

4.3.3.1.3 Alternative 2

Impacts for Alternative 2 would be similar to those described for the Proposed Action except for impacts associated with excavation and new housing construction in the Riverside Heights area. Because this alternative does not include acquisition of the Riverside Heights area, no impacts from excavation or construction at that location would occur. While this alternative calls for more new construction and less renovation than the Proposed Action or Alternative 1, the total number of MFH units post project completion would remain at 808. Implementation of this alternative would not have long-term adverse impacts on surface water quality or quantity on Maxwell AFB, Riverside Heights, or downstream surface water bodies.

4.3.3.1.4 Alternative 3

Impacts for Alternative 3 would be similar to those described for the Proposed Action except for impacts associated with demolition, excavation, and new housing construction in the Riverside Heights area. This alternative includes Air Force acquisition of Riverside Heights and all associated structures on those lands and construction of an additional 149 MFH units. As a result, any demolition of current structures would require the implementation of a SWPPP, incorporation of best management practices for sediment control during construction, and appropriate removal of the existing UST. Impervious surface, post project completion, would be greater than that described for the Proposed Action and Alternatives 1 and 2 because of additional MFH construction. Implementation of this alternative would not have long-term adverse impacts on surface water quality or quantity on Maxwell AFB, Riverside Heights, or downstream surface water bodies.

4.3.3.1.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.3.

4.3.3.1.6 Mitigative Actions

In order to minimize the potential for increased sediment loading of downstream surface water bodies, a SWPPP including best management practices should be implemented as discussed above. No mitigative actions would be required due to absence of long-term adverse impacts to surface water quality or quantity.

4.3.3.2 Groundwater

4.3.3.2.1 Proposed Action

Implementation of the Proposed Action would not impact the quality or quantity of groundwater at Maxwell AFB, Riverside Heights, or the surrounding area. Groundwater beneath the subject property is anticipated to be approximately 45 to 55 ft below ground surface (bgs). Excavation for new housing construction or housing renovation is not expected to reach probable groundwater levels. As a result, groundwater is not likely to be encountered. If groundwater were encountered, care would be taken during construction activities to ensure that groundwater resources are protected from contamination. Likewise, in the event groundwater is encountered

during new housing construction, care would be taken during construction activities to ensure that workers are protected from potentially contaminated groundwater (see Sections 3.3.5 and 4.3.5).

4.3.3.2.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.3.2.3 Alternative 2

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.3.2.4 Alternative 3

Impacts for Alternative 3 would be the same as those described for the Proposed Action except for impacts associated with demolition, excavation, and new housing construction in the Riverside Heights area. This alternative includes Air Force acquisition of Riverside Heights and all associated structures on those lands. Under Alternative 3, the appropriate removal of the existing UST currently within the Riverside Heights area would need to be addressed during demolition activities. Implementation of this alternative would not have long-term adverse impacts on groundwater quality or quantity on Maxwell AFB, Riverside Heights, or downstream surface water bodies.

4.3.3.2.5 No Action Alternative

Under the No Action Alternative, there would be no change in the general conditions described in Section 3.

4.3.3.2.6 Mitigative Actions

There are no adverse impacts to groundwater resources anticipated to result from the Proposed Action or alternatives; therefore, no mitigative actions are required. As mentioned above, if groundwater is encountered during construction activities, care would be taken during construction activities to ensure that groundwater resources are protected from contamination.

4.3.4 Cultural Resources

Significant impacts to cultural properties would occur only if the proposed or alternative actions would adversely affect historic properties. An adverse effect is an undertaking that diminishes the integrity of a property's location, design, setting, materials, workmanship, feeling, or association. An adverse effect can occur through the destruction or alteration of the property, isolation from or alteration of the environment, introduction of intrusive elements (visual, audible, or atmospheric), neglect, and the transfer, lease, or sale of the property (Advisory Council on Historic Preservation and GSA Interagency Training Center 1995).

The nature and potential significance of cultural resources in the potentially affected areas were identified by considering the following definition: Historic properties, under 36 Code of Federal Regulations (CFR) Part 800, are defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP." For the purpose of these regulations this term includes artifacts, records, and remains that are related to and located within such properties. The term "eligible for inclusion in the National Register" includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP-listing criteria.

4.3.4.1 Historic Resources

4.3.4.1.1 Proposed Action

The Proposed Action would involve demolition of buildings in the 500 Area, 700 Row, and No Hundred Area on the Main Base and the 1600 Area and the 300 Row on Gunter Annex; construction of new MFH units for the 500 and No Hundred Areas of the Main Base, and two areas on Gunter Annex (1600 Area and 300 Row); renovation in four areas of the Main Base (600/700 Area, New Area, SOQ, and Juniper) and two areas on Gunter Annex (Gunter New Area and 1600 Area). Demolition of the Riverside Heights buildings is not part of the Proposed Action, for the Air Force would be accepting vacant land with the exception of the Central Office, a City landmark.

Only two of the proposed renovation activities (renovation of the 600/700 Area and SOQ Area) would have any potential to adversely affect historic properties. The 20 carports in the 600/700 Area were not part of the original design of the complex; therefore, the conversion of the carports to garages in a manner reflecting the design style of the existing structures would have no adverse effect on the historic properties. Whole-house renovation of the SOQ Area would be conducted in accordance with the guidelines in the Maxwell AFB Cultural Resources Management Plan (Harvey and Poplin 1999), the Secretary of the Interior's Guidelines for Rehabilitation, and the Programmatic Agreement prepared for this action. Renovations within the SOQ Area would, therefore, be designed to have no adverse effect on the historic properties.

4.3.4.1.2 Alternative 1

This action differs from the Proposed Action in that Riverside Heights would not be acquired; all new housing construction would occur in existing MFH areas on Maxwell AFB. The proposed demolition and construction associated with Alternative 1 would have no effect on historic properties. Similarly, proposed renovations of the 600/700 Area and the SOQ Area (same as Proposed Action) would have no adverse effect on historic properties.

4.3.4.1.3 Alternative 2

This alternative differs from the Proposed Action and Alternative 1 in that, with the exception of the SOQ Area, Juniper Area, and the 600/700 Area, all MFH would be demolished. This alternative does not include acquisition of Riverside Heights. As such, demolition and construction under Alternative 2 would have no effect on historic properties. Similarly,

proposed renovations of the 600/700 Area and the SOQ Area (same as previous actions) would have no adverse effect on historic properties.

4.3.4.1.4 Alternative 3

Under Alternative 3, the Air Force would acquire Riverside Heights land and all associated structures on those lands, provided the associated structures, with the exception of the Central Office, are determined ineligible for inclusion in the NRHP. This alternative differs from the Proposed Action, Alternative 1, and Alternative 2 in that except for the SOQ Area, Juniper Area, and the 600/700 Area, all MFH and existing structures on the Riverside Heights Public Housing Area would be demolished (except the Central Office – the Chappell House) and the land retained.

Demolition of the public housing buildings at Riverside Heights would not constitute an adverse effect because the buildings would be ineligible for inclusion in the NRHP.

4.3.4.1.5 No Action Alternative

Under the No Action Alternative, there would be no demolition or construction activities or change from the baseline condition. Given existing funding limitations, historical buildings would continue to deteriorate from lack of necessary repairs.

4.3.4.1.6 Mitigative Actions

Provided that the stipulations under the Programmatic Agreement are followed, no adverse impacts to historic properties are expected under the Proposed Action or Alternatives 1, 2, or 3; therefore, no further mitigative actions are required.

4.3.4.2 Archaeological Resources

4.3.4.2.1 Proposed Action

The Proposed Action would involve demolition of buildings in the 500 Area, 700 Row, and No Hundred Area on the Main Base and the 1600 Area and the 300 Row on Gunter Annex; construction of new MFH units for the 500 and No Hundred Areas of the Main Base, and two areas on Gunter Annex (1600 Area and 300 Row); renovation in four areas of the Main Base (600/700 Area, New Area, SOQ, and Juniper) and two areas on Gunter Annex (Gunter New Area and 1600 Area). Demolition of the Riverside Heights buildings is not part of the Proposed Action, for the Air Force would be accepting vacant land with exception of the Central Office, a City landmark.

The proposed construction on the Main Base and Gunter Annex would have no effect on archaeological properties, for investigations have indicated that the areas have been disturbed and exhibit no potential for intact deposits. The Riverside Heights portion of the APE, although exhibiting a high degree of development, may contain intact deposits related to both the prehistoric and historic occupations of the area that would be adversely affected.

4.3.4.2.2 Alternative 1

This action differs from the Proposed Action in that Riverside Heights would not be acquired; all new housing construction would occur in existing MFH areas on Maxwell AFB. The proposed demolition and construction associated with Alternative 1 would have no effect on archaeological properties. Similarly, proposed renovations of the 600/700 Area and the SOQ Area (same as Proposed Action) would have no effect on archaeological properties.

4.3.4.2.3 Alternative 2

This alternative differs from the Proposed Action and Alternative 1 in that except for the SOQ Area, Juniper Area, and the 600/700 Area, all MFH would be demolished. This alternative does not include acquisition of Riverside Heights. As such, demolition and construction under Alternative 2 would have no effect on archaeological properties. Similarly, proposed renovations of the 600/700 Area and the SOQ Area (same as previous actions) would have no effect on archaeological properties.

4.3.4.2.4 Alternative 3

Under Alternative 3, the Air Force would acquire Riverside Heights land and all associated structures on those lands. This alternative differs from the Proposed Action, Alternative 1, and Alternative 2 in that except for the SOQ Area, Juniper Area, and the 600/700 Area, all MFH and existing structures on the Riverside Heights Public Housing Area would be demolished (except the Central Office – the Chappell House) and the land retained.

Demolition and construction on Maxwell AFB property would have no effect on archaeological properties, for investigations have indicated that the areas have been disturbed and exhibit no potential for intact deposits. Similarly, proposed renovations of the 600/700 Area and the SOQ Area (same as previous actions) would have no effect on archaeological properties.

The Riverside Heights portion of the APE, although exhibiting a high degree of development, may contain intact deposits related to both the prehistoric and historic occupations of the area. Therefore, there is potential for an adverse effect on archaeological properties within the Riverside Heights area.

4.3.4.2.5 No Action Alternative

Under the No Action Alternative, there would be no demolition or construction activities or change from the baseline condition, and therefore no adverse effect on archaeological properties.

4.3.4.2.6 Mitigative Actions

Impacts to archaeological properties at Riverside Heights are possible under the Proposed Action and Alternative 3. To mitigate potential adverse effects on archaeological deposits, an archaeological sampling plan and, if necessary, an evaluation plan and a mitigation plan would be developed in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the property.

4.3.5 Hazardous Materials and Wastes

The degree to which proposed construction, renovation, and demolition activities could affect the existing environmental management practices was considered in evaluating potential impacts to hazardous materials and wastes, including ERP sites. Impacts could result if non-hazardous/regulated and hazardous substances were collected, stored and/or disposed of improperly.

4.3.5.1 Hazardous Materials

4.3.5.1.1 Proposed Action

The use of hazardous materials during the implementation of the Proposed Action is expected to be limited to construction vehicle maintenance (fuel, oils, and lubricants) and construction activities (adhesives, sealants, etc.). These materials would be required to be properly contained, manifested, and managed. Authorization from Maxwell AFB Environmental Flight would need to be acquired prior to use of hazardous materials.

Asbestos: ACM is present in the 600/700 Area, 700 Row Area, No Hundred Area, and the SOQ/Juniper Area of the Main Base; and the mechanical room of the 300 Row Area at Gunter Annex. The guidelines present in the Maxwell AFB Asbestos Management Plan must be followed to abate all ACM from the affected units prior to demolition and/or renovation activities. Because the Air Force would acquire Riverside Heights after all structures have been removed, it is assumed that all necessary ACM abatement would be conducted by the Montgomery Housing Authority or City of Montgomery prior to Air Force acquisition of the property. No ACM would be used in the construction of new MFH units.

Lead-Based Paint: LBP is currently considered to be found in almost all areas in the Main Base and the Gunter Annex. The areas that are not considered to contain LBP are the New Area and the Juniper Area on the Main Base; and the 100 Area, 200 Area, and 1600 Area on Gunter Annex. HUD has stated that LBP is not present within Riverside Heights (USAF 2004c). On Maxwell AFB, procedures stated in the Maxwell LBP Management Plan must be followed to properly manage facilities that have LBP. Note that historical activities do not preclude areas where LBP has been abated or not found to be LBP free. LBP may be present within the soils surrounding the facilities. If it is necessary to remove soils for off-site disposal, a limited number of random samples would be collected to assess the presence or absence of lead in soil, and to properly categorize the soil for hazardous constituents per applicable state and federal regulations for disposal off-site.

Pesticides: Currently, at both Maxwell AFB and Riverside Heights, residents and management are applying commercially available pesticides. Maxwell AFB records indicate the historical application of several pesticides that are no longer approved for use. Although these pesticides were used in accordance with manufacturers' guidance and directions, the potential exists for residual concentrations in the soil underlying MFH at the base. Selective soil sampling has been conducted in the SOQ Area at Maxwell Main Base. The results indicated the presence of DDT, DDD, DDE, dieldrin, and endrin. Because of the results of this sampling event, it would be beneficial to obtain random soil samples from areas where demolition and construction would

take place, including construction areas at Riverside Heights. The sampling would be used to ascertain the presence or absence of pesticides in the soil and to properly categorize the soil for hazardous constituents, if applicable, per State and federal regulations for disposal off-site.

4.3.5.1.2 Alternative 1

The impacts for this alternative would be the same as those described for the Proposed Action, except that the Air Force would not acquire Riverside Heights and no MFH units would be constructed at that location.

4.3.5.1.3 Alternative 2

The impacts for this alternative would be the same as those described for the Proposed Action, with the following exceptions. The Air Force would not acquire Riverside Heights and no MFH units would be constructed at that location. Because this alternative includes an increased amount of construction and demolition when compared to the Proposed Action and Alternative 1, there would likely be an increased need for disposal of ACM, LBP, and soils potentially impacted by LBP and pesticides.

4.3.5.1.4 Alternative 3

The impacts for this alternative would be the same as those described for the Proposed Action, with the following exceptions: The Air Force would acquire Riverside Heights, including all structures currently at that location. Demolition and removal of the structures at Riverside Heights would be required. This alternative also includes an increased amount of construction and demolition and a greater number of MFH units post project completion (957) when compared to the Proposed Action, Alternative 1, and Alternative 2. Additional demolition activities, particularly at Riverside Heights, would likely increase the need for disposal of ACM, LBP, and soils potentially impacted by LBP and pesticides.

4.3.5.1.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.5.

4.3.5.1.6 Mitigative Actions

Impacts with regard to hazardous materials would not be expected from the proposed activities. All hazardous materials would be managed according to state and federal regulations. Therefore, no mitigative actions would be required

4.3.5.2 Hazardous Waste

4.3.5.2.1 Proposed Action

Regulated wastes are not expected to be generated as a result of the construction of MFH units. Any ACM-and LBP-containing materials removed/generated during the demolition and renovation of existing units would be managed in accordance with established installation

management plans and state and federal regulations. As described in Section 4.3.5.1.1, a limited number of soil samples should be collected to ascertain the presence or absence of pesticides and lead so that any excess soil may be disposed of per applicable state and federal regulations.

4.3.5.2.2 Alternative 1

The impacts for this alternative would be the same as those described for the Proposed Action, except that the Air Force would not acquire Riverside Heights and no MFH units would be constructed at that location.

4.3.5.2.3 Alternative 2

The impacts for this alternative would be the same as those described for the Proposed Action, except that (1) the Air Force would not acquire Riverside Heights and no MFH units would be constructed at that location, and (2) there would be an increase in demolition and construction activities. As a result, there would likely be an increased need for disposal of ACM, LBP, and soils potentially impacted by LBP and pesticides.

4.3.5.2.4 Alternative 3

The impacts for this alternative would be the same as those described for the Proposed Action, except that the Air Force would acquire Riverside Heights, including all structures currently at that location, and demolition and removal of the structures at Riverside Heights would be required. This alternative also includes an increased amount of construction and demolition and a greater number of MFH units post project completion (957) compared to the Proposed Action, Alternative 1, and Alternative 2. As a result, there would likely be an increased need for disposal of ACM, LBP, and soils potentially impacted by LBP and pesticides.

4.3.5.2.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.5.

4.3.5.2.6 Mitigative Actions

Impacts with regard to hazardous wastes would not be expected from the proposed activities. All hazardous wastes would be managed according to State and federal regulations. Therefore, no mitigative actions would be required.

4.3.5.3 Environmental Restoration Program

4.3.5.3.1 Proposed Action

As shown in Tables 3-5 and 3-6 and Figures 3-9 and 3-10, there are nine ERP sites found within the MFH housing areas on Maxwell AFB; four on the Main Base and five on Gunter Annex. Information below has been summarized from the EBS reports prepared for the subject properties (USAF 2004a, USAF 2004b, USAF 2004c).

Of the four sites on the Main Base, two are closed (ST002 and ST009), as there was no evidence of releases at these sites. The portion of ERP Site SD001 that is present in the 500 Area and SOQ/Juniper Area does not appear to exhibit contamination levels of concern. Groundwater contamination associated with ERP Site SS004 requires further corrective action. Regardless of the presence and status of these ERP sites, groundwater contamination is also present beneath all or a portion of each of the subject properties in relation to other sources not originating in the housing areas (USAF 2004a).

Of the five sites on Gunter Annex, one is closed (ST001). Two ERP sites, ERP Site SS001 and ERP Site SS005, are currently undergoing FS. Analytical results report that soil and groundwater contamination has been detected, but mostly at concentrations that are below regulatory levels. No further action has been recommended for the soils at ERP SS001 and ERP SS005. A ruling has yet to be determined on groundwater (USAF 2004a). Part of ERP Site SS004 is located within the east side of the 1600 Area. No significant soil contamination associated with Site SS004 has been detected, warranting no further action for SS004 soils. However, contaminated groundwater is present, the source of which appears to be in the adjacent industrial complex that was historically part of Gunter Annex. A remediation system is currently in operation at the adjacent property, and LTM will continue at ERP Site SS004 until 2 years after the remediation system ceases operations (USAF 2004a).

AOC004 is located within the boundaries of the 300 Area on Gunter Annex. AOC004 (also identified as AOC013) was the site of a former Auto Hobby Shop. The 2003 ERP Management Action Plan indicated the presence of a small groundwater contaminant plume at former AOC004/AOC013. However, investigation activities indicated that contaminants were below levels of concern, and the site was not added to the ERP. All of the AOCs identified at Gunter Annex were determined to pose no concerns, and no additional investigation of the AOCs was warranted (USAF 2004b).

Shallow groundwater is not a source of drinking water and it is unlikely that residents at the subject properties would be exposed to contaminated groundwater. Because of the depth to groundwater, estimated at 45 to 55 ft bgs, it is unlikely that construction activities would encounter groundwater. As noted in Section 4.3.3, if groundwater were encountered, care would be taken during construction activities to ensure that groundwater resources are protected from contamination. Likewise, in the event groundwater is encountered during new housing construction, care would be taken during construction activities to ensure that workers are protected from potentially contaminated groundwater.

4.3.5.3.2 Alternative 1

The impacts for this alternative would be the same as those described for the Proposed Action.

4.3.5.3.3 Alternative 2

The impacts for this alternative would be the same as those described for the Proposed Action.

4.3.5.3.4 Alternative 3

The impacts for this alternative would be the same as those described for the Proposed Action.

4.3.5.3.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.5.

4.3.5.3.6 Mitigative Actions

Impacts with regard to the ERP sites would not be expected from the proposed activities. As noted above, in the unlikely event groundwater was encountered, care would be taken during construction activities to ensure that groundwater resources are protected from contamination. Likewise, in the event groundwater is encountered during new housing construction, care would be taken during construction activities to ensure that workers are protected from contaminated groundwater.

4.3.6 Infrastructure and Utilities

The following factors were considered in evaluating potential impacts to infrastructure and utilities: (1) the degree to which a utility service would have to alter operating practices and personnel requirements, (2) the degree to which the change in demands from implementation of the proposed or alternative actions would impact the utility system's capacity, (3) the degree to which a transportation system would have to alter operating practices and personnel requirements to support the action, (4) the degree to which the increased demands from the proposed program would reduce the reliability of transportation systems, and (5) the degree to which the proposed or alternative actions would change surface water runoff and erosion characteristics.

4.3.6.1 Potable Water

4.3.6.1.1 Proposed Action

Maxwell AFB uses an estimated 551 million gallons of potable water per year, of which approximately 117 million gallons are consumed by families living in MFH. Because of the 14-unit increase in the number of housing units associated with the Proposed Action, a slight increase in potable water consumption at Maxwell AFB would be expected; however, overall potable water consumption in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

4.3.6.1.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.6.1.3 Alternative 2

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.6.1.4 Alternative 3

This alternative adds 149 MFH units compared to other alternatives, which represents an 18 percent increase in the overall number of MFH units. As a result, the expected amount of potable water consumption at Maxwell AFB would increase by a similar percentage. However, overall domestic potable water consumption in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

4.3.6.1.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.2.

4.3.6.1.6 Mitigative Actions

No adverse impacts to potable water would be anticipated for the proposed activities. Therefore, no mitigative actions would be required.

4.3.6.2 Sanitary Sewer

4.3.6.2.1 Proposed Action

Maxwell AFB currently produces an estimated 386 million gallons of wastewater per year, of which approximately 82 million gallons is generated by families living in MFH. Similar to base-wide potable water consumption, the increase in the number of housing units by 14 units would result in a slight increase in wastewater generation by Maxwell AFB. Overall domestic wastewater generation in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

The Proposed Action requires the replacement of some existing sewer lines on-base. At Maxwell AFB, sewer lines in the 1600 Area and New Areas (Main Base and Gunter Annex) would be retained, while lines in all other MFH areas would be replaced as needed. Excavated material would be used to backfill the trenches after installation of the new laterals on-base. Since City of Montgomery property (off Riverside Heights) uses sewer lines at Riverside Heights to transport waste to the Towassa Wastewater Treatment Plant, coordination with the Montgomery Water Works and Sanitary Sewer Board will occur prior to installation of new sewer lines on Riverside Heights.

4.3.6.2.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action, except that Riverside Heights would not be acquired, and therefore no sewer lines would be installed on that property.

4.3.6.2.3 Alternative 2

Impacts for this alternative would be the same as those described for the Proposed Action, except that Riverside Heights would not be acquired, and therefore no sewer lines would be installed on that property.

4.3.6.2.4 Alternative 3

Impacts on Maxwell AFB for this alternative would be the same as those described for the Proposed Action except that Riverside Heights and the existing structures would be acquired as is. Due to the expected poor sewer line condition and unknown age of the lines, it is expected that replacement of the existing sewer lines would be necessary.

This alternative adds 149 MFH units compared to other alternatives, which represents an 18 percent increase in the overall number of MFH units. As a result, the expected amount of wastewater generated at Maxwell AFB would increase by a similar percentage. However, overall domestic wastewater generation in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

Sewer lines at Riverside Heights would remain in place or be rerouted during demolition to accommodate wastes from City of Montgomery properties (off Riverside Heights) which use those lines to transport wastes to the Towassa Wastewater Treatment Plant. Once construction begins, coordination with the Montgomery Water Works and Sanitary Sewer Board will occur prior to installation of new sewer lines on Riverside Heights

4.3.6.2.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.1.

4.3.6.2.6 Mitigative Actions

Mitigation measures to protect health and welfare would not be required for the proposed activities. There would be no impacts to wastewater treatment and capabilities.

4.3.6.3 Solid Waste

The following factors were considered in evaluating potential impacts to solid waste management: the degree to which proposed construction, changes in operations, and the potential for generating additional waste could affect the existing solid waste management program and capacity of the area landfills.

The solid waste generated during construction of the project would consist of spent building materials such as concrete, metals, and lumber, and underground utilities such as sanitary sewer, stormwater system, and water lines that are removed prior to installation of new lines. Because of past pesticide applications in the housing areas, any soils removed from a site during demolition and construction activities would need to be sampled in order to properly characterize

the soils for disposal. The contractor is also responsible for managing any LBP and ACM according to local, state, and federal regulations.

4.3.6.3.1 Proposed Action

The Proposed Action includes whole-house renovation of 157 units, minor renovation of 234 units, demolition of 296 units, and new construction of 310 units. All of these activities would generate construction debris, the generation of which would be divided over 4 years. Table 4-2 summarizes the potential increases in solid waste generation from the Proposed Action.

Table 4-2 Solid Waste Generation from Renovation, Construction, or Demolition Activity for Proposed Action

Description of Action	Number of Units Affected	Total Area Affected (sq ft)	Rate of Debris Generated [1] (lb/sq ft)	Estimated Solid Waste Generated from Action (Tons)
Whole-House Renovation	157	45,000	24.05	541
Minor Renovation	234	46,800[2]	4.38	102
Demolition [3]	296	466,107	111	25,869
New Construction	310	637,320	4.38	1,396
Sq ft=square feet lb/sq ft= pounds per square foot			**Total Solid Waste (Tons)**	**27,908**

[1] USEPA 1998.
[2] No square footage added. Area affected for partial renovation for each unit is the area of a 10-ft by 20-ft one-car garage.
[3] Demolition debris includes concrete slabs from all affected units.

Based on the estimated rates indicated in Table 4-2, approximately 27,908 tons of construction debris would be generated over a 4-year period. This results in approximately 6,977 tons per year (tpy), increasing the total expected solid waste disposal from Maxwell AFB during the Proposed Action to 12,617 tpy, roughly double the current Maxwell AFB contribution (5,640 tpy).

The North Montgomery C&D area of the landfill currently receives approximately 110,000 tpy. The increase in solid waste disposal from the Proposed Action would be short term and would represent a 6 percent increase in solid waste disposal for this time period. The North Montgomery C&D area of the landfill currently has a remaining life expectancy of 20 years; however, there are approximately 40 adjacent acres of land that would be available for landfill use once the existing C&D landfill space reached capacity (Manasco 2005). Therefore, there is sufficient capacity to handle the short-term increase in solid waste.

There would be a slight increase in solid waste production on Maxwell AFB from residents because the number of housing units would increase by 14 units. Similar to domestic wastewater generation and potable water consumption, overall solid waste generation in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

Whole-house renovations of the 808 units would occur again later in the program, generating approximately 18,076 tons of solid waste. This estimate was generated by using the total area in square feet of the 808 units post construction, demolition, and renovation activities (Table 2-3); multiplying that number by the estimated rate of debris generated from whole-house renovation (24.05 pounds/square foot); and dividing that by 2000 to determine tonnage.

4.3.6.3.2 Alternative 1

Impacts for this alternative would be the same as the Proposed Action with the following exceptions: This alternative would generate slightly more solid waste than the Proposed Action (see Table 4-3). This is because the types of newly constructed units proposed for this action differ from those of the Proposed Action, resulting in a slightly different total area of new construction. Whole-house renovations occurring later in the program would generate approximately 18,076 tons of solid waste. This estimate was generated by using the total area in square feet of the 808 units post original construction, demolition, and renovation activities (Table 2-5); multiplying that number by the estimated rate of debris generated from partial renovation (24.05 pounds/square foot); and dividing that by 2000 to determine tonnage.

Table 4-3 Solid Waste Generation from Renovation, Construction, or Demolition Activity for Alternative 1

Description of Action	Number of Units Affected	Total Area Affected (sq ft)	Rate of Debris Generated[(1)] (lb/sq ft)	Estimated Solid Waste Generated from Action (Tons)
Whole-House Renovation	157	45,000	24.05	541
Minor Renovation	234	46,800[(2)]	4.38	102
Demolition [(3)]	296	466,107	111	25,869
New Construction	310	638,460	4.38	1,398
			Total Solid Waste (Tons)	**27,910**

sq ft=square feet
lb/sq ft= pounds per square foot
(1) USEPA 1998.
(2) No square footage added. Area affected for partial renovation for each unit is the area of a 10-ft by 20-ft one-car garage.
(3) Demolition debris includes concrete slabs from all affected units.

4.3.6.3.3 Alternative 2

Alternative 2 includes whole-house renovation of 57 units, minor renovation of 20 units, demolition of 610 units, and new construction of 624 units. All of these activities would generate construction debris, the generation of which would be divided over 4 years. Table 4-4 summarizes the potential increases in solid waste generation from Alternative 2.

Table 4-4 Solid Waste Generation from Renovation, Construction, or Demolition Activity for Alternative 2

Description of Action	Number of Units Affected	Total Area Affected (sq ft)	Rate of Debris Generated[1] (lb/sq ft)	Estimated Solid Waste Generated from Action (Tons)
Whole-House Renovation	57	5,000	24.05	60
Minor Renovation	20	46,800[2]	4.38	102
Demolition[3]	610	968,653	111	53,760
New Construction	624	1,138,210	4.38	2,493
			Total Solid Waste (Tons)	**56,415**

sq ft=square feet
lb/sq ft= pounds per square foot
[1] USEPA 1998.
[2] No square footage added. Area affected for partial renovation for each unit is the area of a 10-ft by 20-ft one-car garage.
[3] Demolition debris includes concrete slabs from all affected units.

This alternative would generate construction debris quantities of approximately 56,415 tons over a 4-year period. This amounts to approximately 14,104 tpy, increasing the total expected solid waste disposal from Maxwell AFB for the first 4 years of the project to 19,744 tpy, more than triple the current Maxwell AFB contribution (5,640 tpy).

The North Montgomery C&D area of the landfill currently receives approximately 110,000 tpy (Manasco 2005). The increase in solid waste disposal from Alternative 2 would be short term (4 years) and would represent a 13 percent increase in solid waste disposal for this time period. The North Montgomery C&D area of the landfill currently has a remaining life expectancy of 20 years; however, there are approximately 40 adjacent acres of land that would be available for landfill use once the existing C&D landfill space reached capacity (Manasco 2005). Therefore, there is sufficient capacity to handle the short-term increase in solid waste.

There would be a slight increase in solid waste production on Maxwell AFB from residents because the number of housing units would increase by 14 units. Similar to domestic wastewater generation and potable water consumption, overall solid waste generation in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

Whole-house renovations of the 808 units would occur again later in the program, generating approximately 18,076 tons of solid waste. This estimate was generated by using the total area in square feet of the 808 units post original construction, demolition, and renovation activities (Table 2-7); multiplying that number by the estimated rate of debris generated from partial renovation (24.05 pounds/square foot); and dividing that by 2000 to determine tonnage.

4.3.6.3.4 Alternative 3

Alternative 3 includes whole-house renovation of 57 units, minor renovation of 20 units, demolition of 1,098 units (including 482 houses, a training facility building, a community center, three maintenance buildings, and the Peterson Elementary School), and new construction of 773 units. All of these activities would generate construction debris, the generation of which

would be divided over 4 years. Table 4-5 summarizes the potential increases in solid waste generation from Alternative 3.

Table 4-5 Solid Waste Generation from Renovation, Construction, or Demolition Activity for Alternative 3

Description of Action	Number of Units Affected	Total Area Affected (sq ft)	Rate of Debris Generated[1] (lb/sq ft)	Estimated Solid Waste Generated from Action (Tons)
Whole-House Renovation	57	5,000	24.05	60
Minor Renovation	20	46,800[2]	4.38	102
Demolition[3]	1,098	1,489,516	111	82,668
New Construction	773	1,430,930	4.38	3,134
			Total Solid Waste (Tons)	**85,964**

sq ft=square feet
lb/sq ft= pounds per square foot
[1] USEPA 1998.
[2] No square footage added. Area affected for partial renovation for each unit is the area of a 10-ft by 20ft one-car garage.
[3] Demolition debris includes concrete slabs from all affected units.

Under this alternative, the contractor would also be responsible for the removal of the structures and existing underground sanitary sewer, stormwater system, and water lines at Riverside Heights, which would result in added solid waste generation. Because underground utility records have not been retained for Riverside Heights, it is unknown how much debris would be generated from their removal. Based on the estimated volumes indicated in Table 4-5, this alternative would generate construction debris quantities of approximately 85,964 tons over a 4-year period. This amounts to approximately 21,491 tpy, increasing the total expected solid waste disposal from Maxwell AFB for the first 4 years of the project to 27,131 tpy, almost five times the current Maxwell AFB contribution (5,640 tpy).

The North Montgomery C&D area of the landfill currently receives approximately 110,000 tpy (Manasco 2005). The increase in solid waste disposal from Alternative 3 would be short term (4 years) and would represent a 19 percent increase in solid waste disposal for this time period. The North Montgomery C&D area of the landfill currently has a remaining life expectancy of 20 years; however, there are approximately 40 adjacent acres of land that would be available for landfill use once the existing C&D landfill space reached capacity (Manasco 2005).

There would be an increase in solid waste production on Maxwell AFB from residents, as the number of housing units would increase by 149 units compared to other alternatives. Similar to domestic wastewater generation and potable water consumption, overall solid waste generation in the community would not change because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

Whole-house renovations of the 957 units would occur again later in the program, generating approximately 21,660 tons of solid waste. This estimate was generated by using the total area in square feet of the 957 units post original construction, demolition, and renovation activities (Table 2-9); multiplying that number by the estimated rate of debris generated from minor renovation (24.05 pounds/square foot); and dividing that by 2000 to determine tonnage.

4.3.6.3.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.3.

4.3.6.3.6 Mitigative Actions

No adverse impacts are expected as a result of implementing the Proposed Action, Alternative 1, Alternative 2, or Alternative 3; therefore, no mitigation measures are required.

4.3.6.4 Drainage

4.3.6.4.1 Proposed Action

The Proposed Action includes some infrastructure improvements, including street drainage repairs throughout the MFH areas. These improvements would require minor regrading of existing drainage ways and swales, installation of drainpipes beneath driveways and sidewalks, and replacement of driveway aprons. These improvements would require excavation and disturbance of areas currently stabilized with grass or pavement. New roads would be constructed in Riverside Heights and existing stormwater draining systems would be replaced. Short-term increases in soil erosion and sediment loadings in stormwater runoff would be minimized by implementation of the SWPPP. Construction activity would also accommodate the natural drainage patterns and anticipated runoff volumes at the site. A construction stormwater permit would be obtained from the ADEM before any construction activities began. Preparation and implementation of a SWPPP would be required to address surface water quality impacts from drainage system improvements. This SWPPP would include the following management actions:

- Sediment must be retained on-site to the greatest extent practicable using structural best management practices (e.g., silt fencing, erosion control fabric)
- Vegetated buffer zones should be maintained along all perennial to ephemeral drainages
- Structural best management practices must be used to divert uphill stormwater away from construction areas
- Velocity dissipation devices should be used at all discharge locations

4.3.6.4.2 Alternative 1

Drainage impacts for this alternative would be the same as those described for the Proposed Action except that Riverside Heights would not be acquired and drainage at that location would not be affected under this alternative.

4.3.6.4.3 Alternative 2

Drainage impacts for this alternative would be the same as those described for the Proposed Action except that (1) a greater amount of demolition activities would cause a greater area of ground disturbance, and (2) Riverside Heights would not be acquired and drainage at that location would not be affected under this alternative.

4.3.6.4.4 Alternative 3

Drainage impacts for this alternative would be the same as those described for the Proposed Action except that this alternative would result in the greatest amount of ground disturbance due to the increase in demolition and construction activities. Drainage improvements required under the Proposed Action on-base and on Riverside Heights would also be accomplished under this alternative.

4.3.6.4.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.4.

4.3.6.4.6 Mitigative Actions

Preparation and implementation of a SWPPP, as described above, would include measures such as using silt fences or hay bales to minimize sediment loading of runoff. These measures would be temporary, utilized only during periods of construction or demolition.

4.3.6.5 Transportation

4.3.6.5.1 Proposed Action

There would be a short-term increase in traffic counts resulting from the demolition, construction, and renovation activities. A wide variety of tradespeople would enter the MFH areas on Maxwell AFB and Riverside Heights on a daily basis to accomplish the renovation, demolition, and other aspects of the Proposed Action. Increased traffic counts would be expected in the early morning hours as workers arrive at the job site and in the early evening as workers depart for the day. This would typically coincide with the normal commuting patterns of base occupants who work similar hours.

Because the number of MFH units would increase by 14 units, the number of families living in the housing areas would also increase, resulting in a slight, long-term increase in traffic counts on the installation.

Transportation of heavy equipment, materials, and roll-off dumpsters to and from the MFH areas would add additional short-term traffic. The heavy loads that would be expected from this type of traffic could adversely affect road surface conditions if the roadway section is not adequate to support continued heavy equipment traffic for an extended period. Repair of small roadway sections may be required following completion of the construction, demolition, and renovation projects. New roads in Riverside Heights would be constructed based on the contractor-chosen

MFH unit layout. If these roads are constructed prior to construction of MFH units on Riverside Heights, these roads may also need minor repairs following completion of MFH unit installation activities.

The demolition and construction activities would tend to have a greater effect on transportation systems than would the renovation activities because the demolition and construction would require: (1) more transportation of demolition debris, (2) increased delivery of construction materials, (3) increased use of heavy equipment, and (4) increases in the number of tradespeople working at the site.

4.3.6.5.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action except that Riverside Heights would not be acquired.

4.3.6.5.3 Alternative 2

Impacts from implementation of Alternative 2 would be similar to those from the Proposed Action; however, there would be a greater occurrence of traffic congestion associated with the increase in construction-related vehicles needed for the increase of demolition and construction activities. An increase in demolition and construction activities would also increase the potential of adversely affecting road surface conditions due to the increased number of heavy loads containing construction materials and demolition debris.

4.3.6.5.4 Alternative 3

Impacts from implementation of Alternative 3 would be similar to those from the Proposed Action; however, there would be a greater occurrence of traffic congestion associated with the increase in construction-related vehicles needed for the increase of demolition and construction activities. An increase in demolition and construction activities would also increase the potential of adversely affecting road surface conditions due to the increased number of heavy loads containing construction materials and demolition debris. Traffic congestion along Bell Street post construction would also increase as a result of the 149 MFH unit increase.

4.3.6.5.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.5.

4.3.6.5.6 Mitigative Actions

The increase in traffic congestion along Bell Street related to Alternative 3 would be alleviated by the concurrent action of widening of Bell Street to add an additional inbound lane to Maxwell AFB (see Section 2.6). Because implementation of the Proposed Action, Alternative 1, or Alternative 2 would not cause negative long-term impacts to transportation infrastructure at Maxwell AFB, no mitigative measures would be required.

4.3.6.6 Electricity/Natural Gas

4.3.6.6.1 Proposed Action

Implementation of the Proposed Action would slightly increase overall electrical and natural gas consumption at Maxwell AFB due to the addition of 14 MFH units. Regionally, electricity/natural gas consumption would remain the same because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

4.3.6.6.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.6.6.3 Alternative 2

Impacts for this alternative would be the same as those described for the Proposed Action.

4.3.6.6.4 Alternative 3

Electrical and natural gas consumption for Maxwell AFB would be greater than that described for the Proposed Action due to the 149 unit increase in MFH over existing conditions; however, regionally, electricity/natural gas consumption would remain the same because the number of personnel (and dependents) assigned to Maxwell AFB would remain the same.

4.3.6.6.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.6.6.

4.3.6.6.6 Mitigative Actions

Implementation of the proposed or alternative actions would not increase overall energy demands; therefore, no mitigative actions would be required.

4.3.7 Socioeconomic Resources

The analysis below for socioeconomic resources is based on the following assumptions:

Population. No additional personnel would be assigned to Maxwell AFB as a result of the proposed or alternative actions. Therefore, no changes in population are expected.

Housing. Depending on the availability of housing on the installation, families would be required to temporarily relocate during replacement and whole-house renovation. Wherever possible, these families would be housed in other MFH units at Maxwell AFB. Families who cannot be housed on the installation would be required to move off-base during replacement and whole-house renovation. It is assumed that families required to move off-base during construction would seek temporary rental housing off-base.

Education. For any action that would require temporary relocation of families to off-base housing, minimal impacts to education would occur, as most families would likely request a hardship waiver status to keep their children in the on-base elementary school or their current off-base school.

Economy. Any change in employment levels for housing administration for the proposed and alternative actions is insignificant in the larger Montgomery economy. The assessment of the economic impact of socioeconomic resources is based on historical cost assumptions contained in Table 4-6 (Smith 2005). The Air Force has not entered into a contract with a private developer to accomplish the proposed or alternative actions; therefore, construction, demolition, and renovation expenditures included in Table 4-6 are used for analysis purposes only.

Table 4-6 Economic Impact of Proposed and Alternative Actions

Action	Demo (ft^2)	Cost Factor \$10/ (ft^2)	Const (ft^2)	Cost Factor \$75/ft^2	Whole-House Renov (ft^2)	Cost Factor \$50/ft^2	Total Estimated Cost
Proposed Action	466,107	\$4,661,070	637,320	\$47,799,000	45,000	\$2,250,000	\$54,710,070
Alt. 1	466,107	\$4,661,070	638,460	\$47,884,500	45,000	\$2,250,000	\$54,795,570
Alt. 2	968,653	\$9,686,530	1,138,210	\$85,365,750	5,000	\$250,000	\$95,302,280
Alt. 3	1,489,516	\$14,895,160	1,430,930	\$107,319,750	5,000	\$250,000	\$122,464,910
No Action	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Demo = demolition
Const = construction
Renov = renovation
ft^2 = square feet
n/a = not applicable

4.3.7.1 Proposed Action

Housing. It is assumed that the military families required to relocate off-base during the first phase of the Proposed Action would seek temporary housing, and that those impacts would be divided equally over 4 years. Under this scenario, the maximum number of families relocated to off-base housing during demolition or whole-house renovation would be 453 (those currently living on-base whose units would be demolished or undergo whole-house renovation). Therefore, approximately 113 families would be displaced in each of the 4 years

The local available housing stock could easily accommodate the potential additional demand for housing that would occur as a result of relocation. According to the HRMA, the 2003 rental vacancy rate is 11.4 percent, and the projected rental vacancy rate for 2008 is 10.8 percent. An increase of 113 families per year represents 0.2 percent of 44,481 renter-occupied units in the Maxwell AFB Market Area (defined as a 60-minute commute or within a 20-mile radius). Based on the 0.2 percentage point decrease in vacant housing units and the short-term nature of the

housing demand, the Proposed Action would not have a significant impact on the availability of housing in the local community.

Education. Because the Proposed Action would not result in an increase in the local population, the only potential impact on local schools would be the transfer of students from one school location to another as a result of housing relocation during construction activities. However, it is unlikely that relocated families would prefer to enroll their children in alternate schools, particularly given that any transfer would be temporary. It is assumed that most families would request hardship waivers to allow their children to remain in their original school during relocation. There would be no impact on children in junior or senior high school, as the only available on-base school is an elementary school. Based on dividing the phases equally over 4 years, approximately one-quarter of the Maxwell Elementary School children could transfer into the Montgomery County School system per year of project activity (if waivers were not granted). Montgomery County Schools have more than ample capacity to accommodate Maxwell Elementary students displaced temporarily by demolition, construction, and renovation activities, so the impact would be minor. Dalraida Elementary School (zoned for Gunter Annex) alone has an enrollment of 567 students, with a capacity for a minimum of 80 additional students.

Economy. Expenditures for the Proposed Action are expected to be incurred primarily in two phases, during the first 4 years of the project and again 25 years later for a period of 5 years. Expenditures during the first phase are likely to be higher than the second phase because the first phase includes demolition, construction, and renovation while the second phase would be limited to renovations only. One of the first 4 years of estimated expenditures would be used as representative of the maximum socioeconomic impact of the Proposed Action because the 4 years will be assumed to be divided equally. Based on the calculations included in Table 4-6, and assuming that project activities would be evenly distributed during the first 4 years, expenditures for the Proposed Action would be approximately $13.7 million per year. Therefore, demolition, construction, and renovation activities associated with the Proposed Action would have a short-term, positive impact on the local economy.

4.3.7.2 Alternative 1

Impacts for Alternative 1 are the same as those for the Proposed Action except that there would be a very slight increase in the short-term positive impact on the economy.

4.3.7.3 Alternative 2

Impacts for Alternative 2 are the same as those for the Proposed Action, with the following exceptions:

Housing. Under this scenario, the maximum number of families that would be relocated to off-base housing during demolition or whole-house renovations would be 667 (those currently living on-base whose units would be demolished or undergo whole-house renovation). Therefore, approximately 167 families would be displaced in each of the 4 years.

The local available housing stock could easily accommodate the potential additional demand for housing that would occur as a result of relocation. According to the HRMA, the 2003 rental vacancy rate is 11.4 percent, and the projected rental vacancy rate for 2008 is 10.8 percent. An increase of 167 families per year represents 0.38 percent of 44,481 renter-occupied units in the Maxwell AFB Market Area (defined as a 60-minute commute or within a 20-mile radius).

Economy. Based on the calculations included in Table 4-6 above, and assuming that project activities would be evenly distributed during the first 4 years, expenditures for Alternative 2 would be approximately $23.8 million per year.

4.3.7.4 Alternative 3

Impacts for Alternative 3 are the same as those for the Proposed Action, with the following exceptions:

Housing. Under this alternative, 149 MFH units would be added to the installation. Although this action potentially removes 149 families from the local rental market, this number is not significant compared to the Housing Market Area.

Education. A 149–unit increase in MFH would result in a greater number of students at Maxwell Elementary. Maxwell Elementary has a capacity of 700 students, with an enrollment of approximately 458 students; therefore, the school has ample capacity to accommodate the additional student load.

Economy. Under this alternative, the maximum amount of demolition and construction would take place, resulting in the largest short-term positive impact on the local economy ($30.6 million per year) compared to all other alternatives.

4.3.7.5 No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions described in Section 3.3.7. Maxwell AFB would retain all 794 MFH units and the deficit of 14 MFH units would remain. Because of limited military funding, there would be no whole-house renovation or periodic capital repair and improvements. As such, MFH housing at Maxwell AFB would continue to deteriorate. In addition, the minimum square footage requirements for MFH would not be met.

4.3.7.6 Mitigative Actions

Since neither the proposed or alternative actions are expected to have an adverse impact on socioeconomic resources, no mitigative actions are needed.

4.3.8 Environmental Justice

Based upon the findings of this environmental analysis, potential short-term adverse noise, air quality, surface water, drainage, solid waste, and transportation impacts were identified for the proposed and alternative actions. Short-term beneficial impacts were identified for the local economy as a result of construction, demolition and renovation activities under the proposed and

alternative actions. Riverside Heights, although exhibiting a high degree of development, may contain intact deposits related to both the prehistoric and historic occupations of the area that would be adversely affected. Therefore, an environmental justice analysis is warranted to determine whether there would be disproportionately adverse impacts on minority and/or low-income populations in the identified census tracts.

The U.S. EPA defined minority and/or low-income populations in the April 1998 Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses as:

The minority and/or low-income population of the affected areas is greater than 50 percent of the affected area's general population; or the minority population percentage of the area is greater than the minority population percentage in the general population or other appropriate unit of geographic analyses.

The affected area or impact footprint contains census tracts 9, 10, and 53.01, and the larger regional COC is the City of Montgomery. Based on U.S. Census data presented in Table 3-7, the City of Montgomery has a minority population of 52.8 percent and a low-income population of 17.7 percent.

In comparison, census tract 9 has a minority population of 40.4 percent and a low-income population of 2.8 percent, which is less than the EPA threshold of 50 percent. Therefore, census tract 9 is not considered either a minority or low-income area.

Census tract 53.01 has a minority population of 54.9 percent and a low-income population of 3.7 percent. Census tract 53.01 has a higher minority population when compared to the COC; therefore, the census tract exceeds the USEPA threshold and is defined as a minority population.

Census tract 10 has a minority population of 89.4 percent and a low-income population of 65.8 percent, which is significantly greater than the minority and low-income populations of the COC and exceeds the EPA threshold of 50 percent. Census tract 10 is therefore considered both a minority and low-income population.

In summary, census tract 9 (Maxwell AFB) was eliminated from this analysis because it does not meet the EPA threshold criteria for a minority or low-income community. Census tract 53.01 (Gunter Annex) is considered a minority community and census tract 10 (includes Riverside Heights) is considered both a minority and low-income population.

4.3.8.1 Proposed Action

Renovation, demolition, and construction activities associated with the Proposed Action would cause short-term increases in air and noise emissions for the duration of construction activities. However, emissions would attenuate rapidly with distance from the construction site and would be evenly distributed throughout the project area, thereby not disproportionately affecting a single population. Short-term impacts associated with surface water and drainage would be localized to the construction sites and minimized through implementation of a SWPPP. Off site surface water and drainage impacts are not expected; therefore, no disproportionate impacts to environmental justice communities are expected. Short-term solid waste impacts are limited to

the construction and established disposal sites; short-term traffic congestion would primarily occur on Maxwell AFB and Bell Street and would equally affect all who use Bell Street. Therefore, no disproportionate impacts to environmental justice communities from short-term solid waste and transportation impacts are expected. Expenditures associated with project activities would have a short-term positive impact on the local economy. It is assumed that workers, both skilled and unskilled, would be drawn from the available work force. As such, short-term positive impacts would be evenly distributed within the region, thereby not disproportionately affecting a single population.

The Riverside Heights property would be acquired after the Montgomery Housing Authority has relocated residents as part of its sale of the property to the City. Under this alternative, the facilities in Riverside Heights, except for the historic Central Office building, would be removed as part of the Montgomery Housing Authority/City action prior to Air Force acquisition of the property. Impacts to archaeological properties at Riverside Heights are possible as a result of construction activities under the Proposed Action. To mitigate potential adverse effects on archaeological deposits, an archaeological sampling plan and, if necessary, an evaluation plan and a mitigation plan would be developed in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the property.

4.3.8.2 Alternative 1

Impacts for this alternative would be the same as those described for the Proposed Action except that Riverside Heights would not be acquired by the Air Force. As described under the Proposed Action, no disproportionate adverse effects on minority or low-income populations are expected.

4.3.8.3 Alternative 2

Impacts for this alternative would be the same as those described for Alternative 1.

4.3.8.4 Alternative 3

Impacts for this alternative would be the same as those described for the Proposed Action except that Riverside Heights, along with the existing structures, would be acquired. As in the Proposed Action, the Montgomery Housing Authority would have found adequate housing for relocated residents prior to transfer of the property to the City of Montgomery.

4.3.8.5 No Action Alternative

Under the No Action Alternative, there would be no change in baseline conditions described in Section 3.3.8.

4.3.8.6 Mitigative Actions

No mitigative actions would be required. Best management practices during construction activities would mitigate noise, air quality, surface water, and drainage impacts to off-base minority or low-income communities. To mitigate potential adverse effects on archaeological deposits, an archaeological sampling plan and, if necessary, an evaluation plan and a mitigation

plan would be developed in consultation with the SHPO and Indian Tribes that may attach religious or cultural importance to the property.

4.4 CUMULATIVE EFFECTS

A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

As described in Section 2.6, other proposed projects are foreseeable at Maxwell AFB and surrounding areas within the region of influence. These actions are not directly related to the proposed or alternative actions evaluated in this EA. This EA addresses the environmental impacts of these other actions only in the context of potential cumulative impacts, if any. Actions considered for cumulative effects are listed below:

- Maxwell AFB:
    - Construction of Air Force Non-Appropriated Funds Bowling Center, Gunter Annex, FY06;
    - Construction of an Integrated Operational Support Facility, Gunter Annex, FY06;
    - Fitness Center, Gunter Annex, FY09;
    - Relocation of Bell Street Gate to provide better security, Maxwell AFB;
    - Squadron Officer College Lodging Phase 4, Maxwell Main Base, FY06;
    - Day Street Shoppette, Maxwell Main Base, FY06; and
    - Add/alter Library, Maxwell Main Base, FY06.

- The Alabama Department of Transportation is planning to construct a new exit ramp from Interstate 65 to Bell Street. In addition, the two I-65 bridges over the Alabama River will be widened. Following completion of the bridge work, I-65 will be widened from Catoma Creek to the Alabama River and I-85 will be widened from I-65 to Hall Street. Bell Street will also likely be widened to add an additional inbound lane to Maxwell AFB.

In an effort to provide adequate housing for families in Riverside Heights, the Montgomery Housing Authority is considering selling Riverside Heights to the City of Montgomery. Proceeds from the sale of the property would be used to construct new homes for Riverside Heights residents; however, families would not be moved from Riverside Heights until after other adequate housing is available.

Noise

Maxwell AFB has proposed several additional construction projects during the same period as the Proposed Action or alternative actions. Also, the Alabama Department of Transportation

plans to complete construction on I-65 at Bell Street. Due to the temporary, short-term, and localized nature of construction noise, no cumulative impacts are anticipated.

Air Quality

Implementation of the MFH privatization at Maxwell AFB would result in short-term emissions during renovation, construction, and demolition of homes and associated infrastructure, principally from site clearing/preparation activities and the use of construction equipment and related vehicles. The emissions would be temporary and would be eliminated after the activity is completed. There would be no or a negligible increase in long-term emissions as it is assumed that POV use would remain relatively the same and new boiler and generators associated with the housing would be comparable to those already in use.

The Air Force proposes to conduct seven other construction projects during the same period as the proposed MFH privatization at Maxwell AFB. Air emissions from these other construction projects are also primarily short-term in nature, and associated with construction activities. The long-term emissions from the proposed construction projects would occur from an increase in boilers, generators, and other possible emission sources associated with the operation of several of these facilities. The relocation of the Bell Street Gate would have no effect on long-term emissions.

The air emissions from the the Alabama Department of Transportation's proposed construction of a new exit ramp at I-65 to Bell Street would be primarily short-term in nature and associated with construction activities. The long-term increase in air emissions would be from increased vehicle traffic in this area. There is no reason to expect that the construction of this exit ramp would cause a substantial increase in the number of vehicles entering the Bell Street Gate.

The cumulative effects from the MFH privatization and the other proposed projects are expected to have little impact when compared to the total emissions for the Montgomery MSA.

Water Resources

The long-term and cumulative effects of the proposed projects would appear to be neutral or possibly positive overall. Surface water management would present the main issue of concern. In the short term, construction and shallow excavation required during the building phases would primarily require addressing sediment control and runoff. It is also probable, as a result of newer stormwater designs and construction techniques, that an improvement in surface water control and long-term sedimentation would occur.

Cultural Resources

Any construction projects in, or immediately adjacent to, the SOQ Area or the 600/700 Area would be designed so as to not adversely affect the historic character of the buildings and the overall district. Plans for any other base actions in these historic districts would be submitted to the SHPO for issuance of a Determination of No Adverse Effect to either the structures or the district. Actions would not be implemented without a Determination of No Adverse Effect; therefore, cumulative impacts on historic properties would not occur.

Under Alternative 3, any construction projects in, or immediately adjacent to, the Central Office (Chappell House) would be designed so as to not adversely affect the historic character of the building. Plans for any other base actions involving the Chappell House would be submitted to the SHPO for issuance of a Determination of No Adverse Effect to the structure. Actions would not be implemented without a Determination of No Adverse Effect; therefore, cumulative impacts on historic properties would not occur.

Any potential adverse effects to significant archaeological resources, under the Proposed Action or Alternatives 1, 2, or 3, would be mitigated through data recovery; thus, there would be no potential for cumulative impacts.

Hazardous Materials and Wastes

The proposed and alternative actions would require the management of ACM and LBP during demolition of existing MFH units. Management of these waste streams would occur under existing Maxwell AFB management programs and would not result in adverse effects. The potential for the presence and management of pesticide-impacted soils beneath existing MFH units would also not result in adverse effects. Therefore, the proposed and alternative actions would not contribute to cumulative effects to hazardous materials and wastes in or around Maxwell AFB.

Infrastructure and Utilities

The proposed and alternative actions would increase overall wastewater generation, potable water usage, and electricity/natural gas consumption for Maxwell AFB but not overall consumption by the City of Montgomery. Other proposed construction projects at Maxwell AFB would also generate additional electricity/natural gas usage for the Base. It is assumed that no new personnel would be assigned to Maxwell AFB once the new facilities are constructed, and therefore, potable water consumption and wastewater generation would not increase as a result of the new proposed on-Base facilities. The cumulative effect of the proposed and alternative actions with other proposed actions would be an increase in on-base consumption of electricity/natural gas. Since an increase in consumption of potable water, electricity/natural gas, and generation of wastewater by MFH units would not increase the total city consumption, they would not contribute to cumulative effects on city consumption.

Increased solid waste loading resulting from the proposed and alternative actions would contribute to the cumulative increase in solid waste generation from construction of four buildings on-base, a gate relocation, and construction of an exit ramp off I-65. Because of the projected life span of the C&D landfill and the potential to add landfill acreage, the C&D landfill should be able to accommodate the overall increase in solid waste generation.

Short-term increases in soil erosion and sediment loadings in stormwater runoff resulting from other proposed construction activities at Maxwell AFB in conjunction with those resulting from the proposed and alternative actions' drainage improvements would contribute to overall soil erosion and stormwater sediment loading at Maxwell AFB. Implementation of a SWPPP would reduce these impacts.

Increased vehicular traffic resulting from the proposed and alternative actions, along with increased traffic from other proposed construction and demolition activities occurring at Maxwell AFB and surrounding areas, would contribute to increased traffic counts. Traffic carrying heavy loads also has the potential to cause damage to roadways not designed to support continued heavy equipment traffic for an extended period. Once Bell Street is widened, traffic congestion related to the increased number of MFH units should decrease.

Socioeconomic Resources

Several other projects are likely to be ongoing during the proposed or alternative actions; however, no projects have been identified that would contribute to a change in population, housing, or education requirements. The projects identified would, however, contribute to positive impacts to the economy through expenditures in the local area.

The Montgomery Housing Authority is relocating residents of Riverside Heights to other adequate housing, most likely other Montgomery Housing Authority units. If all the residents were to enter the rental market, the increase of 392 families represents 0.88 percent of the 44,481 renter-occupied units in the Maxwell AF Market Area. The cumulative impact is about 1.2 percent when added to the Proposed Action or any of the alternatives.

Environmental Justice

The impacts associated with the proposed action and alternatives are short-term in nature and would not disproportionately affect minority or low-income in the project area or contribute to negative cumulative effects for environmental justice populations. The relocation of Riverside Heights residents to alternative housing is an action initiated by the Montgomery Housing Authority and City of Montgomery, but is considered here as it impacts cumulative effects analysis. Under the Proposed Action and Alternative 2, which allow for the acquisition of Riverside Heights, the families moved by the Housing Authority from Riverside Heights would not be moved until adequate housing is obtained. Additionally, proceeds from the sale of the Riverside Heights area would be used to construct new homes for the Montgomery Housing Authority residents. The potential Air Force utilization of this property, if a transfer occurs, would have many long-term benefits to the community, including benefiting the environmental justice populations through modernizing housing. Current and future housing requirements could be realized with the construction of modern housing and improved streetscaping, and landscaping would enhance the overall appearance and utilization of this housing site.

Chapter 5

List of Preparers

CHAPTER 5
LIST OF PREPARERS

Name/Organization	Degree	Resource Area	Years of Experience
Paige Rhodes/WESTON	BS, Biology; MS, Environmental Science	Project Manager; Public Involvement; Resource Lead, Hazardous Materials and Wastes	14
Frank Burgess/WESTON	BS, Economics	Deputy Project Manager, Peer Review	18
Barry Dubinski/WESTON	PhD, Marine Biology and Biochemistry; MS, Biology; BS, Environmental Science	Quality Assurance/Quality Control; Senior Technical Review	20
Diane Arcuicci/WESTON	BA, English	Editorial Review	15
Kurt M. Hellauer/Geo-Marine, Inc.	BA, Government	Resource Lead, Noise	15
Amy R. Scholik/Geo-Marine, Inc.	PhD, Biology; BS, Fisheries Management	Resource Specialist, Noise	6.5
Anurag Kumar/Geo-Marine, Inc.	MS, Marine Science; BS, Biology	Resource Specialist, Noise	6
Kevin Eldridge/WESTON	BS, Meteorology; MS, Atmospheric Sciences	Resource Lead, Air Quality	23
Barry Peterson/WESTON	BS, Meteorology; MS, Atmospheric Sciences	Resource Specialist, Air Quality	5
Bret Missildine/WESTON	BS, Agronomy and Soils; MS, Soil Physics	Resource Lead, Water Resources	11
Kevin Johnson/WESTON	BS, Environmental Science	Resource Specialist, Water Resources	8
Duane E. Peter /Geo-Marine, Inc.	BA, History; MA, Anthropology	Resource Lead, Cultural Resources	31
Marsha Prior/Geo-Marine, Inc.	BA, Sociology; MA, Anthropology; PhD, Anthropology	Resource Specialist, Cultural Resources	15

Name/Organization	Degree	Resource Area	Years of Experience
Michelle Wurtz/Geo-Marine, Inc.	BA, Geography and Anthropology; MA, Anthropology	Resource Specialist, Cultural Resources	4
Joe C. Freeman/Geo-Marine, Inc.	BA, Architecture	Resource Specialist, Cultural Resources	30
Jennifer Peters/WESTON	BS, Geography	Resource Specialist, Hazardous Materials and Wastes; Public Involvement	4
Troy Hile/WESTON	BS, Agricultural Engineering; MS, Environmental Science	Resource Lead, Infrastructure and Utilities	10
Tamara Carroll/WESTON	BS, Bioenvironmental Science	Resource Specialist, Infrastructure and Utilities	3
Colleen Logan/WESTON	MS, Politics of the World Economy	Resource Lead, Socioeconomics	13
Lisa Haskins/WESTON	MA, Urban Planning and Policy	Resource Lead, Environmental Justice	11
Cary Stanford/WESTON	BA, Theatre	Document compilation, formatting	20
Cecilia Polendo/WESTON	--	Document compilation, formatting	15

Chapter 6

List of Persons and Agencies Consulted

CHAPTER 6
LIST OF PERSONS AND AGENCIES CONSULTED

This chapter lists the individuals consulted during the preparation of this EA.

Federal Agencies

Randolph Air Force Base, Texas, Headquarters Air Education and Training Command
Erwin, Marion (HQ AETC/CEVN)

Maxwell Air Force Base, Alabama
Booth, Lori (Housing Privatization)
Stanford, Bobby (Housing Privatization)

City of Montgomery Agencies

City of Montgomery Government
Groves, Jr., Kenneth J. (Director, Planning & Development)
Manasco, William (City Engineer)
Nolan, Thomas (City Landmarks)
Trevor, John (Engineer)

City of Montgomery Historic Preservation Commission
Nolan, Tommy (Commissioner, Planning and Development)

City of Montgomery Water Works and Sanitary Sewer Board
Daniel, Keverly F. (Graduate Engineer)
Morgan, Buddy (General Manager)
Norris, Chris (Project Engineer)

Montgomery Housing Authority
Bailey, Charles (Modernization Coordinator)
Boggs, Lane (Interim Executive Director and Comptroller)
Gruver, Barry (Assistant Director of Maintenance)

City of Montgomery Schools

Montgomery Public Schools
Adams, Gerry (Assistant Superintendent of Operations)
Peterson Elementary School
Carr, Tara (School Aide – Instruction Assistant)
Davis, Carolyn (Librarian)
Henderson, James (Coach)
Miller, Kenyette (Principal)

Other Agencies and Individuals

Advisory Council on Historic Preservation, Office of Federal Agency Programs
Klima, Don (Director)

Alabama Department of Archives and History
Cleveland, Margaret (Registrar)
Alabama Department of Conservation and Natural Resources
Hornsby, John (Environmental Coordinator)

Alabama Department of Environmental Management
Cobb, Stephen (Department of Government Hazardous Waste)
Cole, Lisa (Air Division, Planning Branch, Control Strategies Section)
Davis, Dave (Land Division)
Moore, Jim (Chief, Education and Outreach)

Alabama Department of Transportation
Ashurst, Bill (Pre-Construction Engineer, Sixth Division)
Estes, Randall (Division Engineer, Sixth Division)
Hall, Carol (Design Engineer, Sixth Division)

Alabama Historical Commission
Warner, Dr. Lee (Executive Director)

Central Alabama Regional Planning and Development Commission
Tucker, Bill (Executive Director)

Dixie Electric Cooperative
Harrison, Gary (General Manager, Management)

Geological Survey of Alabama
Mettee, Maurice (Biological Resources Program)
Mink, Bob (Deputy Director, Water Resources)

Montgomery Chamber of Commerce
George, Randall (President)

Montgomery County – City Public Library

Montgomery County Historical Society
Director

Muscogee (Creek) Nation
Ellis, A.D. (Muscogee National Chief)

Poarch Band of Creek Indians
Rolin, Stephanie (Tribal Administrator)

United States Fish and Wildlife Service, Daphne Field Office
Goldman, Larry (Field Supervisor)

(no document text this page)

Chapter 7

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CHAPTER 7
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Appendix A

Interagency Coordination

Final Mailing List

Maxwell AFB
Environmental Assessment
Military Family Housing Privatization

IICEP Mailing List
Revised Final March 30, 2005

Agency	Department	Title	Name	Street Address	Mailing Address	Phone #
Advisory Council on Historic Preservation	Office of Federal Agency Programs	Director	Don Klima	1100 Pennsylvania Avenue, NW, Suite 809 Washington, DC 20004	1100 Pennsylvania Avenue, NW, Suite 809 Washington, DC 20004	202-606-8503
Alabama Department of Archives and History		Register	Margaret Cleveland	624 Washington Ave. Montgomery, AL 36130-0100	624 Washington Ave. Montgomery, AL 36130-0100	334-242-4435
Alabama Department of Conservation and Natural Resources		Environmental Coordinator	Jon Hornsby	64 N. Union Street Montgomery, AL 36104	64 N. Union Street Montgomery, AL 36104	334-242-3465
Alabama Department of Economic and Community Affairs	Office of Water Resources (Alabama Office of Water Resources)	Director of Water Resources	Trey Glenn	401 Adams Ave, Suite 434 Montgomery, AL 36104	PO Box 5690 Montgomery, AL 36103-5690	334-242-5499
Alabama Department of Environmental Management	Government Hazardous Waste		Stephen Cobb	1400 Coliseum Boulevard Montgomery, AL 36110-2059	PO Box 301463 Montgomery, AL 36130-1463	334-271-7739
Alabama Department of Environmental Management	Education and Outreach	Chief	Jim Moore	1400 Coliseum Boulevard Montgomery, AL 36110-2059	PO Box 301463 Montgomery, AL 36130-1463	334-271-7700
Alabama Department of Environmental Management	Land Division		Dave Davis	1400 Coliseum Boulevard Montgomery, AL 36110-2059	PO Box 301463 Montgomery, AL 36130-1463	334-271-7771

Agency	Department	Title	Name	Street Address	Mailing Address	Phone #
Alabama Department of Transportation	Sixth Division	Division Engineer	Randall A Estes	1525 Coliseum Blvd Montgomery, AL 36110	PO Box 8008 Montgomery, AL 36110	334-269-2311
Alabama Forestry Commission		Forestry Manager	Stephanie Roberts	513 Madison Ave. Montgomery, AL 36104	PO Box 302550 Montgomery, AL 36130-2550	334-240-9300
Alabama Historical Commission		Executive Director	Dr. Lee Warner	468 South Perry St. Montgomery, AL 36130	468 South Perry St. Montgomery, AL 36130	334-242-3184
Central Alabama Regional Planning and Development Commission		Executive Director	Bill Tucker	125 Washington Ave. 3rd Floor Montgomery, AL 36104	125 Washington Ave. 3rd Floor Montgomery, AL 36104	334-262-4300
City of Montgomery	Planning Controls/Land Use Control	Director of Planning	Ken Groves	103 North Perry St. Montgomery, AL 36101-1111	PO Box 1111 Montgomery, AL 36101-1111	334-241-2729
Dixie Electric Cooperative	Management	General Manager	Gary Harrison	9100 Atlanta Highway Montgomery, AL 36117	100 Atlanta Highway Montgomery, AL 36117	334-288-1163
United States Environmental Protection Agency - Region IV	Office of External Affairs	Director	Carl Terry	Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303	Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303	404-562-8327
Geological Survey of Alabama	Water Resources	Deputy Director	Bob Mink	402 Hackberry Lane Tuscaloosa, AL 35486-6999	PO Box 869999 Tuscaloosa, AL 35486-6999	205-247-3589
Montgomery Chamber of Commerce		President	Randall George	41 Commerce Street Montgomery, AL 36101	PO Box 79 Montgomery, AL 36101	334-240-9436
Montgomery County School District		Superintendent	Carlinda Purcell	307 S. Decatur Street Montgomery, AL 36104	PO Box 1991 Montgomery, AL 36102	334-223-6700

Agency	Department	Title	Name	Street Address	Mailing Address	Phone #
Montgomery Housing Authority		Interim Executive Director	Lane Boggs	1020 Bell Street Montgomery, AL 36104	1020 Bell Street Montgomery, AL 36104	334-206-7187
Montgomery Water Works		General Manager	Buddy Morgan	22 Bibb Street Montgomery, AL 36104	PO Box 1631 Montgomery, AL 36102-1631	334-206-1600
US Army Corp of Engineers	Planning and Environmental Division		Curtis Flakes		PO Box 2288 Mobile, AL 36628-0001	251-694-4101
US Fish and Wildlife Service	Daphne Field Office	Field Supervisor	Larry Goldman	1208-B Main Street Daphne, AL 36526	PO Drawer 1190 Daphne, AL 36526	251-441-5181
Geological Survey of Alabama - Biological Resources Division	Biological Resources Program		Maurice (Scott) Mettee	420 Hackberry Lane Tuscaloosa, AL 35486-6999	PO Box 869999 Tuscaloosa, AL 35486	205-247-3627
City of Montgomery Historic Preservation Commission	Planning and Development	Commissioner	Tommy Nolan		27 Madison Avenue, 2nd Floor Montgomery, AL 36104	334-241-2722
Montgomery County Historical Society		Director		512 S Court Street Montgomery, AL 36102	PO Box 1829 Montgomery, AL 36102	334-264-1837
Muscogee (Creek) Nation		Muscogee National Chief	A. D. Ellis	P.O. Box 580 Okmulgee, OK 74447		800-482-1979
Poarch Band of Creek Indians		Tribal Administrator	Stephanie Rolin	5811 Jack Spring Road Atmore, AL 36502	5811 Jack Spring Road Atmore, AL 36502	334-368-9136

* Note: Federal Emergency Management Association - Region IV was contacted and did not request to be placed on the list.

General Scoping Letter

DEPARTMENT OF THE AIR FORCE
42D AIR BASE WING (AETC)
MAXWELL AIR FORCE BASE ALABAMA

10 January 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

<name>, <title>
<organization>
<department>
<address>
<address>
<city>, <state> <zip>

Dear <name>,

The United States Air Force is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). We are proposing to privatize military family housing at Maxwell Air Force Base (AFB), which means the base would enter into a real estate transaction with a private developer to manage, maintain, demolish, and/or construct military family housing for military personnel for a period of 50 years beginning in 2006. The overall purpose of the project is to provide a minimum of 808 military family housing units at Maxwell AFB that meet Air Force housing standards and the ongoing and projected housing requirements for the installation.

The privatization project at Maxwell AFB would convey to a private developer a maximum of 794 military family housing units located on Maxwell AFB and Gunter Annex. The project includes the conveyance or transfer of 150 National Register of Historic Places (NRHP) listed Senior Officer Quarters and garages (Historic District) and the conveyance or transfer of NRHP eligible properties. The Air Force will consider all environmental issues affected by military family housing privatization; however, we have identified historic resources as an issue requiring detailed analysis and have begun consultation with the Alabama State Historic Preservation Office (SHPO).

The Air Force is currently developing alternative strategies for privatization of military family housing at Maxwell AFB, including possible acquisition of Riverside Heights, an adjacent property. When developed, the alternative strategies could allow minor renovations to NRHP listed properties. As required by NEPA, the Air Force will also consider taking no action. Under the No Action Alternative, military family housing on Maxwell AFB would not be conveyed or transferred to a private developer, and the Air Force would continue to maintain the existing facilities. All alternative strategies developed for military family housing privatization, including the No Action Alternative, will be assessed in the EA. The location of Maxwell AFB and housing areas associated with this project are enclosed for your reference.

We request your participation early in the process, and solicit any particular concerns or recommendations you may have in the area of this project including those regarding resources that may be of special interest to you. To facilitate cumulative impact analysis, we would also appreciate identification of major projects in the vicinity that may contribute to cumulative effects. Please send your environmental comments to the above address by February 10, 2005.

Thank you for your assistance in this matter. If there are any questions, please contact Mr. Bobby Stanford, 42 MSG/CEH, 334-953-9426.

Sincerely,

DAVID W. MARTINEZ, LtCol, USAF
Deputy Commander, 42d MSG

ENCLOSURES

Tribal Scoping Letter

DEPARTMENT OF THE AIR FORCE
42D AIR BASE WING (AETC)
MAXWELL AIR FORCE BASE ALABAMA

10 January 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

<name>
<title>
<organization>
<address>
<city>, <state> <zip>

Dear <name>,

The United States Air Force is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). We are proposing to privatize military family housing at Maxwell Air Force Base (AFB), which means the base would enter into a real estate transaction with a private developer to manage, maintain, demolish, and/or construct military family housing for military personnel for a period of 50 years beginning in 2006. The overall purpose of the project is to provide a minimum of 808 military family housing units at Maxwell AFB that meet Air Force housing standards and the ongoing and projected housing requirements for the installation.

The privatization project at Maxwell AFB would convey to a private developer a maximum of 794 military family housing units located on Maxwell AFB and Gunter Annex. The project includes the conveyance or transfer of 150 National Register of Historic Places (NRHP) listed Senior Officer Quarters and garages (Historic District) and the conveyance or transfer of NRHP eligible properties. The Air Force will consider all environmental issues affected by military family housing privatization; however, we have identified historic resources as an issue requiring detailed analysis and have begun consultation with the Alabama State Historic Preservation Office (SHPO).

The Air Force is currently developing alternative strategies for privatization of military family housing at Maxwell AFB, including possible acquisition of Riverside Heights, an adjacent property. When developed, the alternative strategies could allow minor renovations to NRHP listed properties. Previous archaeological inventories of Maxwell AFB indicate that no archaeological properties are within the proposed project area. As required by NEPA, the Air Force will also consider taking no action. Under the No Action Alternative, military family housing on Maxwell AFB would not be conveyed or transferred to a private developer, and the Air Force would continue to maintain the existing facilities. All alternative strategies developed for military family housing privatization, including the No Action Alternative, will be assessed in the EA. The location of Maxwell AFB and housing areas associated with this project are enclosed for your reference.

We request your participation early in the process, and solicit any particular concerns or recommendations you may have in the area of this project including those regarding resources that may be of special interest to you. To facilitate cumulative impact analysis, we would also appreciate identification of major projects in the vicinity that may contribute to cumulative effects. Please send your environmental comments to the above address by February 10, 2005.

Thank you for your assistance in this matter. If there are any questions, please contact Mr. Bobby Stanford, 42 MSG/CEH, 334-953-9426.

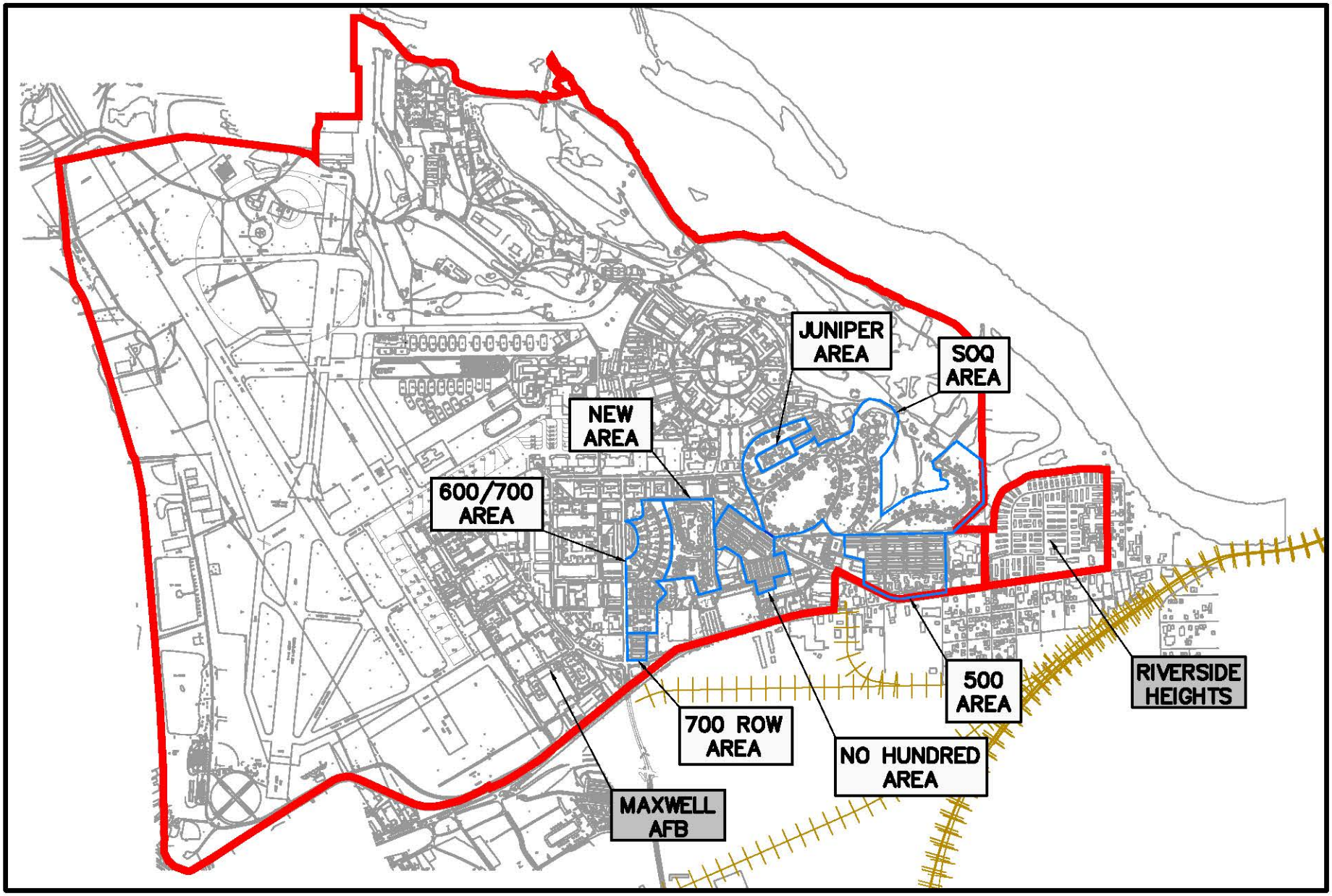
Sincerely,

Originals Signed

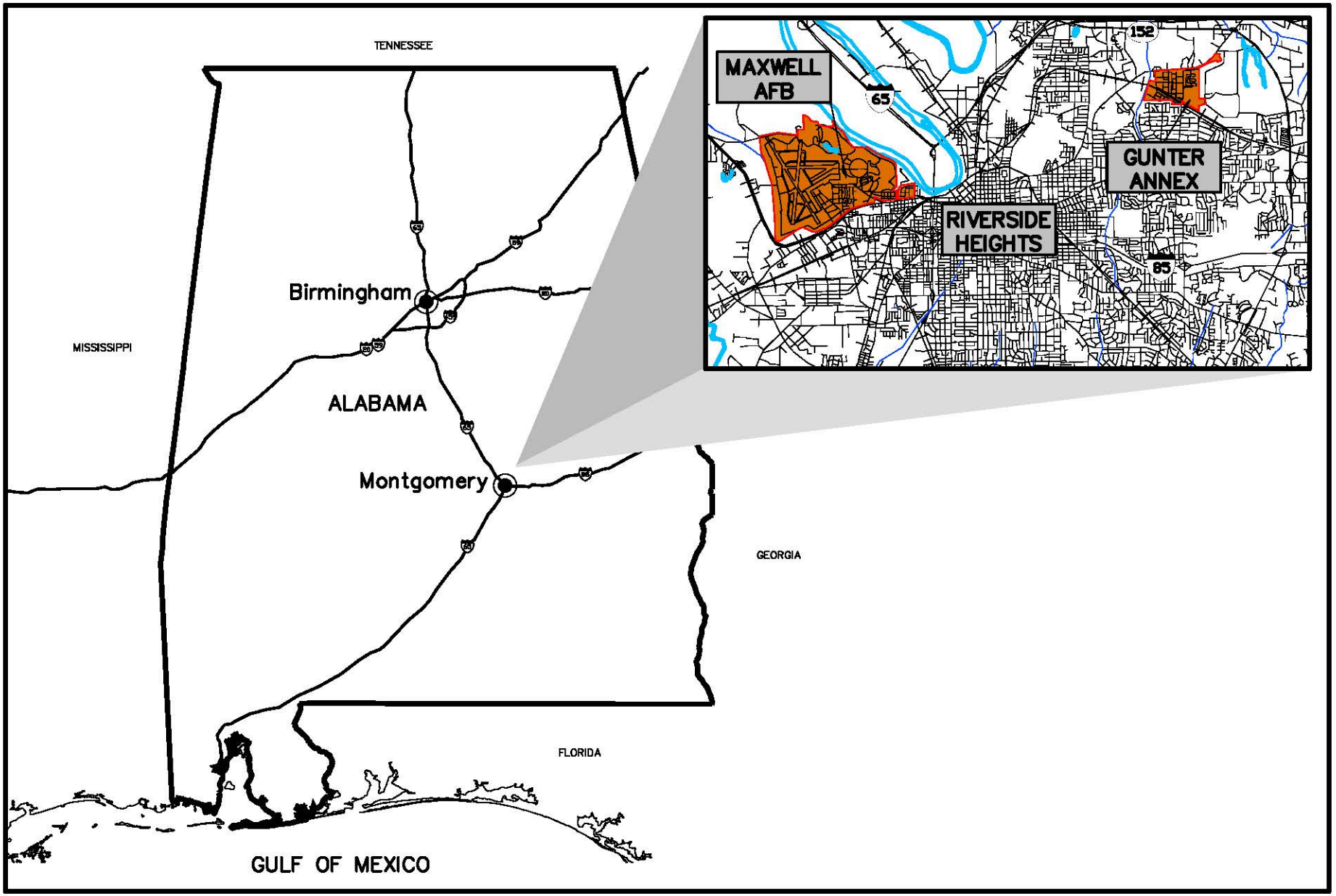
DAVID W. MARTINEZ, LtCol, USAF
Deputy Commander, 42d MSG

ENCLOSURES

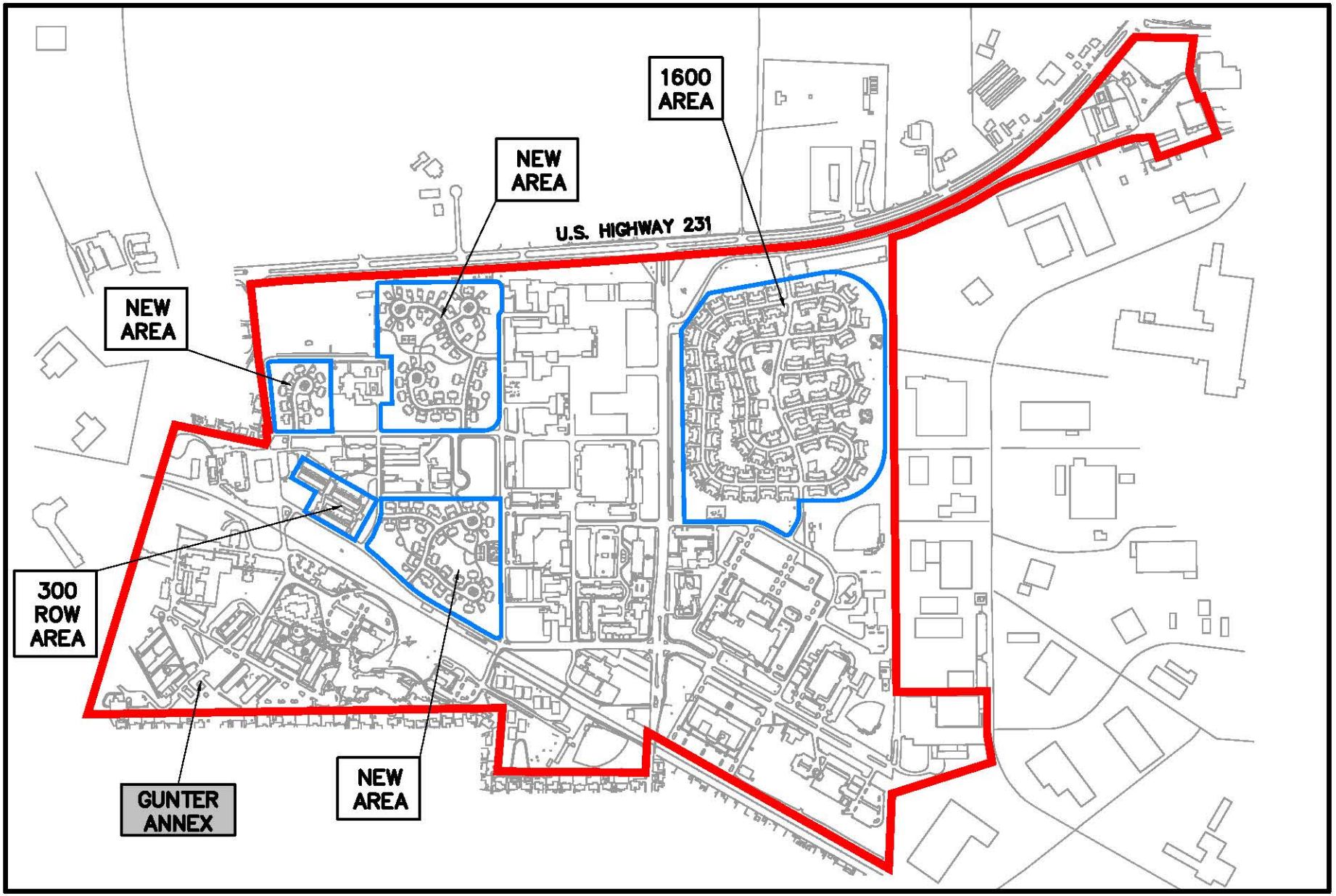
Scoping Maps



Location of Housing on Main Base and Location of Riverside Heights	***Maxwell Air Force Base*** Military Family Housing Privatization Description of Proposed Action and Alternatives	



Regional Location Map	***Maxwell Air Force Base*** Military Family Housing Privatization Description of Proposed Action and Alternatives	



Location of Housing on Gunter Annex

Maxwell Air Force Base
Military Family Housing Privatization
Description of Proposed Action and Alternatives

Scoping Responses

ALABAMA DEPARTMENT OF TRANSPORTATION
SIXTH DIVISION
OFFICE OF DIVISION ENGINEER
POST OFFICE BOX 6008
1525 COLISEUM BLVD.
MONTGOMERY, ALABAMA 36110
Telephone: (334) 269-2311 FAX: (334) 263-2599

Bob Riley
Governor

Joe McInnes
Transportation Director

January 19, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg. 804)
Maxwell AFB, AL 36112-6523

Dear Lt. Colonel Martinez:

This is to acknowledge your letter of January 12, 2005, relative to a proposal to privatize housing at Maxwell Air Force Base and involving housing units at Gunter Annex.

This office is pleased that you have extended the offer of early participation in the project. This office and the department will work with you and your staff to appropriately consider all traffic handling concerns.

There are projects in the planning stages on I-65 near the Clay/Herron Street exit that may affect traffic into and out of the Maxwell campus during the next few months and years.

The two I-65 bridges over the Alabama River will be widened, work beginning December 2005.

Following completion of the bridge work, I-65 will be widened from Catoma Creek to the Alabama River and I-85 will be widened from I-65 to Hall Street.

Our meeting with you on October 14, 2004, concerning the "Gateway Project" resulted in your offer to furnish to this office the final location and orientation of the Maxwell AFB new security gate/facility. Following receipt of this information from your office, we will proceed with pre-construction activities in the I-65/Bell Street corridor. We should not begin work on this corridor study or on any related matters until we hear from you.

Please contact my office any time at (334) 241-8560.

Sincerely,

Randall A. Estes, P. E.
Division Engineer

RAE/bg
Attachment
cc: Mr. Joe McInnes
Mr. D. W. Vaughn
Mr. Ray Bass
Mr. G. M. Harper
Mr. Rex Bush
Mr. Don Arkle
Mr. Bill Ashurst
File

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

IN REPLY REFER TO:
05-0375

January 24, 2005

Lt. Colonel David W. Martinez
42D Air Base Wing (AETC)
50 South LeMay Plaza (Bldg. 804)
Maxwell AFB, AL 36112-6523

Dear LTC Martinez:

We are responding to your letter dated January 10, 2005, requesting comments on the privatization of military family housing at Maxwell Air Force Base, Montgomery, Alabama. We have reviewed the information and are providing the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et.).

After a careful review, the U.S. Fish and Wildlife Service (Service) believes no adverse affect to listed species or Critical Habitat will occur as a result of privatizing family housing. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect endangered or threatened species or Critical Habitat in a manner not previously considered, (2) this action is subsequently modified in a manner not considered in this review, or (3) a new species is listed or Critical Habitat is determined that may be affected by the action.

We will have additional comments after review of the Environmental Assessment containing the full description of the proposed action. If you need additional information with regards to this correspondence, please contact Mr. Bruce Porter at (251) 441-5864 or email bruce_porter@fws.gov.

Sincerely,

Larry E. Goldman
Field Supervisor

Preserving America's Heritage

February 4, 2005

Lieutenant Colonel David W. Martinez
Deputy Commander, 42d Mission Support Group
Department of the Air Force
50 LeMay Plaza South
Maxwell Air Force Base, AL 36112

REF: Proposed Privatization of Family Housing
Maxwell Air Force Base, Alabama

Dear Lieutenant Colonel Martinez:

The ACHP received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible for listing on the National Register of Historic Places. Based upon the information you provided, we do not believe that our participation in consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us. Pursuant to 36 CFR 800.6(b)(iv), you will need to file the final Programmatic Agreement and related documentation at the conclusion of the consultation process. The filing of the Agreement with us is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Tom McCulloch at 202-606-8505, or via eMail at tmcculloch@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Office of Federal Agency Programs

February 9, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

Dear Lt. Colonel Martinez:

Cooperative Utility Services appreciates being informed of this endeavor. We have no comments on the environmental issue, but feel that the successful implementation of this plan will provide us an opportunity to upgrade the electrical system on Maxwell AFB and Gunter Annex. The majority of the electrical lines in the affected areas are overhead which would be replaced with underground facilities, thus greatly improving the service reliability and aesthetics.

If you should have additional questions, please let me know.

Sincerely,

R. Gary Harrison
Chief Executive Officer

RGH/thf

Cooperative Utility Services, L.L.C.
Post Office Box 681570
Prattville, Alabama 36068

Dixie ELECTRIC COOPERATIVE

Central Alabama Electric Cooperative

preserveALA
ALABAMA HISTORICAL COMMISSION

February 17, 2005

David W. Martinez, LtCol, USAF
Deputy Commander, 42nd MSG
50 South LeMay Plaza (Bldg. 804)
Maxwell AFB, Alabama 36112-6523

Re: AHC 2005-0392; Development of Environmental Assessment for Privatization of Military Housing, Maxwell Air Force Base, Montgomery County

LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

tel 334 242•3184
fax 334 240•3477

Dear Mr. Martinez:

The Alabama Historical Commission is in receipt of your January 10th letter regarding the above referenced document. Please be aware that our comments for the draft PA for privatization of family housing were provided at a meeting on November 19, 2004. We look forward to reviewing the Environmental Assessment document when it is available.

We appreciate your commitment to helping us preserve Alabama's non-renewable resources. Should you have any questions, please contact Amanda McBride of this office and include the AHC tracking number referenced above.

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LDB/ALM/alm

Cc: Bobby Stanford
42nd MSG/CEH
50 South LeMay Plaza (Bldg. 804)
Maxwell AFB, Alabama 36112-652

Creek Nation of Oklahoma

Cultural and Historic Preservation

February 9, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

RE:Family Housing

Dear Lt. Colonel Martinez,

We thank you for notifying the Cultural & Historic Preservation Office of the Muscogee (Creek) Nation. In looking at the project location and in checking with our resources, we do not foresee any impact by this undertaking.

However, we expect to be notified in case of **inadvertent** discoveries within the project site that are pertinent to the Muscogee (Creek) Nation as required by the Cultural and Historic Preservation Laws that are applicable.

Sincerely,

Tim Thompson
Cultural Advisor
(918) 732-7732 x7732

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
POST OFFICE BOX 301463 36130-1463 • 1400 COLISEUM BLVD. 36110-2059
MONTGOMERY, ALABAMA
WWW.ADEM.STATE.AL.US
(334) 271-7700

ONIS "TREY" GLENN, III, P.E.
DIRECTOR

BOB RILEY
GOVERNOR

Facsimiles: (334)
Administration: 271-7950
General Counsel: 394-4332
Communication: 394-4383
Air: 279-3044
Land: 279-3050
Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718
Mining: 394-4326

February 10, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

RE: Information Request: *United States Air Force's Request for Assistance with its Environmental Assessment (EA);* Letter to ADEM dated January 10, 2005

Dear Colonel Martinez:

The Alabama Department of Environmental Management (ADEM or the Department) has received your request for information regarding the privatization project at Maxwell Air Force Base/Gunter Annex.

The Department understands that the United States Air Force (USAF) will conduct an Environmental Assessment of this property prior to transfer and is requesting any information related to local remedial activities that might impact the privatization project. Other than ongoing projects at Maxwell and Gunter, the Department is presently not aware of any environmental remediation activities underway in these areas. Additionally, the Department's Governmental Hazardous Waste Branch has conducted a cursory review of the Land Division Wasteland database and Alabama Hazardous Substance Cleanup Fund (AHSCF) projects ongoing in this vicinity, and it does not appear that these sources reflect any information regarding this site.

ADEM's regulatory files are public record. If more specific information is needed, USAF should conduct a file review. To arrange a file review, please contact ADEM's Records Manager, Mr. Scott Demick. His phone number is 334-271-7712. Please note that the request to conduct a file review must also be made in writing to Mr. Demick at the following address: 1400 Coliseum Blvd, Montgomery, Alabama, 36110-2059.

If there are any further questions concerning this matter, please contact Mrs. Kristy Wright at 334-2717782 or via email at kgw@adem.state.al.us.

Sincerely,

Stephen A. Cobb, Chief
Governmental Hazardous Waste Branch
Land Division

KW/mal/January:L:Maxwell/ Environmental Assessment (EA) for Maxwell and Gunter

cc: Jim Grassiano/ADEM
Ann Behl/Bechtel Corporation
File: Land Division/Maxwell AFB/Hazardous Waste/ Correspondence/2005

WATER
WORKS & SANITARY SEWER BOARD
of the City of Montgomery

22 Bibb Street, P.O. Box 1631, Montgomery, Alabama 36102-1631 (334) 206-1600 (334) 240-1616 FAX

February 9, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42nd MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

Re: Environmental Assessment (EA)
Maxwell Family Housing, Gunter Annex, & Riverside Heights

Dear Mr. Martinez:

In response to your request dated January 10, 2005 the Board unfortunately cannot offer much assistance. The infrastructure associated with the above-referenced housing areas are not owned nor operated by the Board. The Board has provided limited assistance in the past for rehabilitation purposes but this assistance was not of sufficient quantity to draw any conclusions or provide recommendations.

A general recommendation for all such redevelopment projects within the Board's service area is to conduct a detailed evaluation of the existing infrastructure to accurately determine its condition. Inflow and infiltration (I&I) is a major concern of any system charged with treating the wastewater generated from a development. Typically infrastructure systems of comparable age in our service area do require replacement or significant rehabilitation.

Should you have any questions or concerns please feel free to contact me at 334.206.1607.

Sincerely,

Thomas R. Morgan
General Manager

Draft EA Letter

DEPARTMENT OF THE AIR FORCE
42D AIR BASE WING (AETC)
MAXWELL AIR FORCE BASE ALABAMA

22 April 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

<name>, <title>
<organization>
<department>
<address>
<address>
<city>, <state> <zip>

Dear <name>,

Enclosed for your review and comment is the Draft Environmental Assessment (EA) for Military Family Housing Privatization at Maxwell Air Force Base (AFB), Alabama. The overall purpose of the project is to provide a minimum of 808 military family housing units at Maxwell AFB that meet Air Force housing standards and the ongoing and projected housing requirements for the installation. This document describes and analyzes alternative plans for privatization of military family housing on Maxwell AFB, including the No Action Alternative, under which housing privatization would not occur.

The project includes the conveyance or transfer of 150 National Register of Historic Places (NRHP) listed Senior Officer Quarters and garages (Historic District) and the conveyance or transfer of NRHP eligible properties. Consultation with the Alabama State Historic Preservation Office (SHPO) continues through development of a Programmatic Agreement for proposed modifications to historic homes on Maxwell AFB.

We request your participation in the process, and solicit any comments or concerns you may have on the Draft EA. Please send your comments to the above address by May 25, 2005.

Thank you for your assistance in this matter. If there are any questions, please contact Mr. Bobby Stanford, 42 MSG/CEH, 334-953-9426.

Sincerely,

Originals Signed

DAVID W. MARTINEZ, LtCol, USAF
Deputy Commander, 42d MSG

ENCLOSURE

Draft EA Responses

(Comments received from Draft EA are summarized in Appendix B)

Appendix B

Public Involvement

Public Involvement

As required by NEPA, the Air Force provides opportunities for public involvement in the NEPA process. A public notice, announcing the availability of the Draft EA and proposed FONSI for Military Family Housing Privatization at Maxwell AFB, was published in the Sunday edition of the Montgomery Advertiser on 17 April and 24 April 2005. The notice invited public review and comment on the Draft EA/FONSI and indicated that copies of the document were available at several local libraries: Montgomery Public Library, Main Library; Maxwell Community Library, Maxwell AFB; and the Gunter Community Library, Gunter Annex. A privacy advisory was included with the public notice and indicated that comments received on the Draft EA/FONSI and the commentor's name could be published in the Final EA/FONSI, but personal home addresses and phone numbers would not be published. Please see the end of this appendix for a copy of the Public Notice.

The public comment period ended on 25 May 2005. The letters received during the public comment period are included in this appendix. The comments and the Air Force responses to those comments follow.

Comment 1: Our concern on the environmental was that the "proposed solution" said that the City of Montgomery would demolish the housing on Riverside Heights and that was never part of the equation. Please review and give me some feedback on that issue. *Source: Paul Hankins, Montgomery Chamber of Commerce.*

Response 1: This analysis is being conducted in accordance with the NEPA which requires Federal agencies to evaluate the potential environmental impacts of their actions before they are implemented. Discussion of potential environmental impacts related to demolition of the property in question is a part of this analysis. The purpose of this document is related to discussion of these potential impacts from an environmental perspective and is not designed to address other matters such as which party may be responsible for the demolition. Any statement related to responsibility for the demolition is not a part of the environmental analysis.

Comment 2: After a thorough review of the assessment, I concur with its findings. I do encourage a continuing dialogue with the Alabama Historical Commission and Historic Preservation Officer. *Source: Bill Tucker, Central Alabama Regional Planning and Development Commission.*

Response 2: Thank you for your comment. The Air Force is continuing to consult with the SHPO on the Programmatic Agreement (PA) for the privatization of family housing on Maxwell AFB.

Comment 3: The U.S. Fish and Wildlife Service (Service) believes no adverse affect to listed species or Critical Habitat will occur as a result of privatizing family housing. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action may that affect endangered or threatened species or Critical Habitat in a manner not previously considered, (2) this action is subsequently modified in a manner not considered in this review, or (3) a new species is listed or Critical Habitat is determined that may be affected by the action. *Source: Larry Goldman, U.S. Fish and Wildlife Service.*

Response 3: Thank you for your comment. The Air Force understands that should there be substantive changes in the privatization proposal or in environmental baseline conditions, additional consultation with the Service may be required.

Comment 4: Cooperative Utility Services appreciates the update on the housing privatization project. We have no additional comments on the environmental issue. Please continue providing me with the progression of the project. Cooperative Utility Services will play an integral role in providing the electrical service to the housing units included in this project. *Source: Gary Harrison, Cooperative Utility Services.*

Response 4: Thank you for your comment. The Air Force acknowledges the role of Cooperative Utility Services in providing electrical service to the housing units, whether privatized or not.

Comment 5: Peterson Elementary is eligible for the National Register of Historic Places. Please provide our office with photographs of the exterior of the building. In addition, please send exterior photos of all 1937 and 1941 buildings. *Source: Elizabeth Brown, Alabama Historical Commission.*

Response 5: Part of both the Proposed Action and Alternative 3 is for the Air Force to acquire unencumbered land assets in Riverside Heights, including the Peterson Elementary School area. At this time, the Air Force is not the owner of these properties. We understand the City of Montgomery is consulting with the SHPO on any potentially historically eligible facilities in the Riverside Heights area. We believe the request for exterior photographs would be more appropriately addressed in the on-going City of Montgomery consultation process.

Comment 6: In the last scenario under the Proposed Action and Alternative 3, however, the property with the buildings will be acquired by Maxwell with the caveat that SHPO determines the buildings (except Central Office) not eligible for the National Register. They will then be torn down for new housing. None of the scenarios allow for acquisition of Riverside Heights and retention of the existing housing. Our office feels that there should be another alternative in which Maxwell acquires Riverside Heights and reuses the existing historic housing. One benefit to such an alternative is that listing Riverside Heights on the National Register would enable the private contractor (long-term lessee) to earn tax incentives for rehabilitating the housing to preservation standards. *Source: Elizabeth Brown, Alabama Historical Commission.*

Response 6: The Air Force appreciates the SHPO's position that the scenario of reusing and preserving the existing housing units on Riverside Heights should have been evaluated. The Air Force considered such an alternative but eliminated it from further study. One of the criteria for the Air Force to acquire real estate (i.e., land assets) is that it must be unencumbered. Facilities which are eligible for listing on the National Register are an encumbrance because they could severely limit the uses that would be made of the land and the facilities. The Air Force would only acquire Riverside Heights if the land is vacant (the Proposed Action) or if the existing housing units could be demolished (Alternative 3). The suggested scenario of reusing the existing housing is not a viable option for the Air Force, and was therefore not assessed.

Comment 7: In all the options, part of the demolition will include impervious cover like roads, sidewalks, driveways, though trees will be preserved *where feasible.* This wording about trees is subjective, so there are no guarantees that mature and significant landscaping will be preserved. If it is part of the overall historic plan of Maxwell the infrastructure and landscaping may remain significant in spite of the fact that non-eligible buildings are removed. It would be useful to do a reconnaissance of the entire base housing to determine the location of the remaining significant features of the historic plan. *Source: Elizabeth Brown, Alabama Historical Commission*.

Response 7: MFH privatization at Maxwell AFB would be conducted in accordance with the Maxwell AFB Tree Ordinance, Maxwell AFB Cultural Resources Management Plan, the Secretary of the Interior's Guidelines for Rehabilitation, and the PA prepared for this action.

Comment 8: Furthermore, if a private contractor (long-term lessee) wishes to apply for tax incentives for rehabilitating historic housing on Maxwell, the overall development plan would be reviewed by the National Park Service. Not only would the NPS look at the actual rehabilitation plan of each historic building, but they would also review how other activities affect the historic character of the area. *Source: Elizabeth Brown, Alabama Historical Commission*.

Response 8: The contractor's development plan would be covered by the PA prepared for this action. See Response 10.

Comment 9: Why are specific actions mentioned in the Proposed Action (2-7)? For instance, enclosing garages and removing site features is specifically listed under this option. *Source: Elizabeth Brown, Alabama Historical Commission.*

Response 9: Specific actions are mentioned to provide the reader with a complete and accurate description of the Proposed Action. These are the actions required to meet the Air Force's goal of providing military families with access to safe, quality, affordable housing in a community in which they would choose to live. Although they may be listed for the Proposed Action, these same actions are required for all the alternatives. Chapter 2 indicates the actions proposed for the historic 600/700 Area and the SOQ Area are identical under all the alternatives.

Comment 10: Documents that transfer buildings to a private contractor must properly cite review by SHPO of all work (rehab of historic buildings, overall site planning, design of new construction, etc.). *Source: Elizabeth Brown, Alabama Historical Commission*.

Response 10: The Air Force is aware of this requirement, and is consulting with the SHPO on the PA for the privatization of family housing at Maxwell AFB. The PA sets forth the details of how the Air Force and the privatization contractor are to be responsible stewards of cultural resources under MFH privatization at Maxwell AFB. MFH privatization at Maxwell AFB would be conducted according to the PA.

Comment 11: Finally, because there is a known archaeological site adjacent to Riverside Heights, we agree that there is a potential to effect archaeological resources here. However, the possibility remains that any archaeological sites within the development were long ago disturbed. A phase I archaeological survey by a professional archaeological should be performed in order to inform your decision. Said report should be reviewed and approved by our office. *Source: Elizabeth Brown, Alabama Historical Commission.*

Response 11: See Section 4.3.4.2.6.

OD ____
CE ____

CARPDC
CENTRAL ALABAMA REGIONAL PLANNING
AND DEVELOPMENT COMMISSION
AUTAUGA, ELMORE & MONTGOMERY COUNTIES

Curtis Jackson
Chairman

Bill J. Tucker
Executive Director

April 26, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, Alabama 36112-6523

Re: Review and Comments
Draft Environmental Assessment
Military Family Housing @ Maxwell AFB

Dear Mr. Martinez:

We have received your Draft Environmental Assessment for Military Family Housing Privatization at Maxwell AFB. It is our understanding that the overall intent of the project is to provide 808 military family housing units which meet Air Force housing standards and the ongoing and projected housing needs of the installation.

After a through review of the assessment, I concur with its findings. I do encourage a continuing dialogue with the Alabama Historical Commission and Historic Preservation Officer.

If this office can be of further assistance, feel free to call me anytime.

Sincerely,

Bill J. Tucker
Executive Director

125 WASHINGTON AVENUE • SUITE 320 • MONTGOMERY, ALABAMA 36104
TELEPHONE (334) 262-4300 • FAX (334) 262-6976

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

IN REPLY REFER TO:
05-0375b

May 3, 2005

Lt. Colonel David W. Martinez
42D Air Base Wing (AETC)
50 South LeMay Plaza (Bldg. 804)
Maxwell AFB, AL 36112-6523

Dear LTC Martinez:

We are responding to your letter, dated April 22, 2005, requesting comments on the Draft Environmental Assessment for Military Family Housing Privatization at Maxwell Air Force Base, Alabama. We have reviewed the information and are providing the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et.).

The U.S. Fish and Wildlife Service (Service) believes no adverse affect to listed species or Critical Habitat will occur as a result of privatizing family housing. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect endangered or threatened species or Critical Habitat in a manner not previously considered, (2) this action is subsequently modified in a manner not considered in this review, or (3) a new species is listed or Critical Habitat is determined that may be affected by the action.

If you need additional information with regards to this correspondence, please contact Mr. Bruce Porter at (251) 441-5864 or email bruce_porter@fws.gov.

Sincerely,

Larry E. Goldman
Field Supervisor

May 20, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42d MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

Dear Lt. Colonel Martinez

Re: Draft Environmental Assessment (EA) for Military Family Housing Privatization at Maxwell Air Force Base)AFB), Alabama.

Cooperative Utility Services appreciates the update on the housing privatization project. We have no additional comments on the environmental issue. Please continue providing me with the progression of this project. Cooperative Utility Services will play an integral role in providing the electrical service to the housing units included in this project.

Sincerely,

R. Gary Harrison
Chief Executive Officer
Cooperative Utility Services, LLC

Cooperative Utility Services, L.L.C.
Post Office Box 681570
Prattville, Alabama 36068

preserveALA
ALABAMA HISTORICAL COMMISSION

May 26, 2005

Lt. Colonel David W. Martinez
Deputy Commander, 42nd MSG
50 South LeMay Plaza (Bldg 804)
Maxwell AFB, AL 36112-6523

LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

Tel 334 242-3184
Fax 334 240-3477

Re: AHC 2005-0019
Environmental Baseline Survey and Draft EA
Maxwell AFB
Privatization of Family Housing
Montgomery County

Dear Colonel Martinez:

Upon review of the above referenced documents, the Alabama Historical Commission has a number of questions and comments. They are as follows:

- Peterson Elementary is eligible for the National Register of Historic Places. Please provide our office with photographs of the exterior of the building.

- In addition, please send exterior photos of all 1937 and 1941 buildings.

- In the last scenario under Proposed Action and Alternative 3, however, the property with the buildings will be acquired by Maxwell with the caveat that SHPO determines the buildings (except for Central Office) not eligible for the National Register. They will then be torn down for new housing. None of the scenarios allow for acquisition of Riverside Heights and retention of the

- existing historic housing. Our office feels that there should be another alternative in which Maxwell acquires Riverside Heights and reuses the existing historic housing. One benefit to such an alternative is that listing Riverside Heights on the National Register, would enable the private contractor (long-term lessee) to earn tax incentives for rehabilitating the housing to preservation standards.

- In all of the options, part of the demolition will include impervious cover like roads, sidewalks, driveways, though trees will be preserved *where feasible*. This wording about trees is subjective, so there are no guarantees that mature and significant landscaping will be preserved. If it is part of the overall historic plan of Maxwell the infrastructure and landscaping may remain significant in spite of the fact that non-eligible buildings are removed. It would be useful to do a reconnaissance of the entire base housing to determine the location of the remaining significant features of the historic plan. Furthermore, if a private contractor (long-term lessee) wishes to apply for tax incentives for rehabilitating historic housing on Maxwell, the overall development plan would be reviewed by the National Park Service. Not only would the NPS look at the actual rehabilitation plan of each historic building, but they would also review how other activities affect the historic character of the area.

- Why are specific actions mentioned in the Proposed Action (2-7)? For instance, enclosing garages and removing site features is specifically listed under this option.

- Documents that transfer buildings to private contractor must properly cite review by SHPO of all work (rehab of historic buildings, overall site planning, design of new construction, etc.)

- Finally, because there is a known archaeological site adjacent to Riverside Heights, we agree that there is a potential to effect archaeological resources here. However, the possibility remains that any archaeological sites within the development were long

ago disturbed. A phase I archaeological survey by a professional archaeologist should be performed in order to inform your decision. Said report should be reviewed and approved by our office.

We appreciate your efforts to help us in preserving Alabama's non-renewable cultural resource. If you have questions or comments or if we may be of additional service, please contact Stacye Hathorn of our office and include the AHC project number referenced above.

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LDB/CSM/DMW/CAA/AWW/ALM/sgh

PUBLIC NOTICE

THE UNITED STATES AIR FORCE
AIR EDUCATION AND TRAINING COMMAND (AETC)

Invites
PUBLIC COMMENT

ON THE ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT
FOR MILITARY FAMILY HOUSING PRIVATIZATION AT
AT MAXWELL AIR FORCE BASE, ALABAMA

The 42nd Mission Support Group, Maxwell Air Force Base (AFB), Alabama, invites public comment on the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed military family housing privatization at Maxwell AFB, Alabama. The EA, prepared in accordance with the National Environmental Policy Act and Air Force instructions, evaluates potential impacts of the proposed and alternative actions, including the No Action Alternative, on the environment. The EA evaluated: noise, air quality, water resources, hazardous materials and wastes, infrastructure and utilities, cultural resources, socioeconomic resources, and environmental justice. Based on the EA, the Air Force has prepared a proposed Finding of No Significant Impact.

Copies of the EA and proposed FONSI are maintained at the Montgomery Public Library, Main Library, 245 High Street, Montgomery, (334-240-4999); Maxwell Community Library, 335 Kirkpatrick Avenue East, Maxwell AFB, (334-953-6484); and Gunter Community Library, 481 Williamson Street, Gunter Annex, (334-416-3179).

Comments may be submitted through May 25, 2005 and be provided to Bobby Stanford, 42 MSG/CEH, 60 West Maxwell Blvd, Maxwell AFB, Alabama 36112, (334-953-9426).

PRIVACY ADVISORY

Your comments on this Draft EA are requested. Any submitted letters or other written comments may be published in the Final EA. As required by law, comments will be addressed in the Final EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list of those requesting copies of the Final EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

Summer: Classes are 'safety net' for youths

From Page 1C

cost of summer school for elementary students. The money budgeted includes the salaries for teachers, principals, janitors, secretaries and library aides, in addition to busing for students and breakfast.

"Summer school is a safety net for kids at risk of failing," he said. "We hope to help them over the summer months so that they can remain with their peers."

The cost of summer school to the district for junior and senior high school students is covered by tuition. Between 300-350 junior and senior high school students are expected to attend the secondary summer school program, Looney said.

Michelle Knight's daughter, a third-grader at Morningview Elementary School, will be attending the reading portion of summer school this year.

"She's a little bummed about having to spend some of her summer vacation in school, but she knows that it is what she needs to do," Knight said. "We are pretty sure that after this summer, she will be back on the right track in reading."

SUMMER SCHOOL

Montgomery County

Montgomery Public Schools will offer summer school in grades K-12 this summer.

- **Elementary school students:** Summer school will be provided for all kindergarten through sixth-grade students who failed reading or math. Students may only take one subject during the summer school term. There are five elementary summer school sites — Dannelly, Harrison, Highland Gardens, E.D. Nixon and Vaughn Road elementary schools. Transportation and breakfast will be provided. There is no cost for elementary summer school.
- **Junior and senior high school students:** Summer school will be offered in the subject areas of math, science, English and social studies (depending on the number of students enrolled) at Bellingrath, Goodwyn and McIntyre middle/ junior high schools and at George Washington Carver and Jefferson Davis high schools. No transportation will be provided. The fees are $110 per half credit for Montgomery County public school students and $160 per half credit for private school students and students who live outside Montgomery County.
- **Sessions:** Elementary summer school will be held May 24 to June 24, 8 a.m. to noon Tuesdays through Fridays. Junior and senior high summer school will be held May 24 to July 20, 7 a.m. to 12:25 p.m. Mondays through Fridays. There will be three separate classes offered.
- **For information:** Call the Montgomery Public Schools public information office at (334) 223-6870.

Elmore County

Elmore County Schools will offer summer school in grades 7-12 this summer.

- **Junior high school students:** Summer school will be offered to seventh- and eighth-grade students in the subject areas of math, science, social studies and English at Millbrook Middle/ Junior High and We tumpka Junior High. No transportation will be provided. Only Elmore County students are allowed to attend the junior high summer school. The cost is free.
- **High school students:** Summer school will be offered in the subject areas of math, science, English and social studies (depending on the number of students enrolled) at Stanhope Elmore High School. No transportation is provided. The fees are $125 per half credit for Elmore County students and $150 per half credit for students outside Elmore County.
- **Two sessions:** There will be two sessions of summer school for both junior high and high school students. The first session is May 31 to June 20; the second session is June 21 to July 14 (no class will be held July 1, 4, or 5)
- **For information** Call the Elmore County public information officer at (334) 567-1207.

PUBLIC NOTICE
THE UNITED STATES AIR FORCE
AIR EDUCATION AND TRAINING COMMAND (AETC)
Invites
PUBLIC COMMENT
ON THE ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR MILITARY FAMILY HOUSING PRIVATIZATION AT MAXWELL AIR FORCE BASE, ALABAMA

The 42nd Mission Support Group, Maxwell Air Force Base (AFB), Alabama, invites public comment on the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed military family housing privatization at Maxwell AFB, Alabama. The EA, prepared in accordance with the National Environmental Policy Act and Air Force instructions, evaluates potential impacts of the proposed and alternative actions, including the No Action Alternative, on the environment. The EA evaluated: noise, air quality, water resources, hazardous materials and wastes, infrastructure and utilities, cultural resources, socioeconomic resources, and environmental justice. Based on the EA, the Air Force has prepared a proposed Finding of No Significant Impact.

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Your comments on this Draft EA are requested. Any submitted letters or other written comments may be published in the Final EA. As required by law, comments will be addressed in the Final EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list of those requesting copies of the Final EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

Appendix C

Air Pollutant Emissions Calculations

Proposed Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	310	37.51	6.31	85.68	9.16	21.63
Renovation	157	2.32	0.40	5.26	0.56	2.28
Demolitions	296	4.33	0.85	10.67	1.11	6.38
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**44.68**	**13.28**	**102.29**	**10.90**	**42.85**

Estimated Yearly Emissions - Proposed Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	11.17	3.32	25.57	2.73	10.71
2007	11.17	3.32	25.57	2.73	10.71
2008	11.17	3.32	25.57	2.73	10.71
2009	11.17	3.32	25.57	2.73	10.71
Total	**44.68**	**13.28**	**102.29**	**10.90**	**42.85**

Alternative 1 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	310	37.56	6.32	85.80	9.17	21.67
Renovation	157	2.32	0.40	5.26	0.56	2.28
Demolitions	296	4.33	0.85	10.67	1.11	6.38
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**44.74**	**13.29**	**102.42**	**10.92**	**42.88**

Estimated Yearly Emissions - Alternative 1 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	11.18	3.32	25.60	2.73	10.72
2007	11.18	3.32	25.60	2.73	10.72
2008	11.18	3.32	25.60	2.73	10.72
2009	11.18	3.32	25.60	2.73	10.72
Total	**44.74**	**13.29**	**102.42**	**10.92**	**42.88**

Alternative 2 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	624	69.12	11.64	157.92	16.88	39.72
Renovation	57	0.84	0.15	1.91	0.20	0.83
Demolitions	610	9.01	1.76	22.18	2.31	13.25
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**79.49**	**19.26**	**182.69**	**19.47**	**66.36**

Estimated Yearly Emissions - Alternative 2 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	19.87	4.82	45.67	4.87	16.59
2007	19.87	4.82	45.67	4.87	16.59
2008	19.87	4.82	45.67	4.87	16.59
2009	19.87	4.82	45.67	4.87	16.59
Total	**79.49**	**19.26**	**182.69**	**19.47**	**66.36**

Alternative 3 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	773	86.55	14.57	197.72	21.13	49.76
Renovation	57	0.85	0.15	1.93	0.21	0.84
Demolitions	1098	13.85	2.71	34.12	3.55	20.39
Infrastructure	-	0.88	11.40	0.98	0.11	24.02
TOTAL:	**-**	**102.13**	**28.83**	**234.75**	**25.00**	**95.00**

Estimated Yearly Emissions - Alternative 3 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	25.53	7.21	58.69	6.25	23.75
2007	25.53	7.21	58.69	6.25	23.75
2008	25.53	7.21	58.69	6.25	23.75
2009	25.53	7.21	58.69	6.25	23.75
Total	**102.13**	**28.83**	**234.75**	**25.00**	**95.00**

Future Renovation[a]						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	808	11.95	2.06	27.06	2.89	11.75
TOTAL:	**-**	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	2.99	0.52	6.77	0.72	2.94
2031	2.99	0.52	6.77	0.72	2.94
2032	2.99	0.52	6.77	0.72	2.94
2033	2.99	0.52	6.77	0.72	2.94
Total	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Future Renovation[b]						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	957	14.33	2.47	32.43	3.46	14.08
TOTAL:	**-**	**14.33**	**2.47**	**32.43**	**3.46**	**14.08**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	3.58	0.62	8.11	0.87	3.52
2031	3.58	0.62	8.11	0.87	3.52
2032	3.58	0.62	8.11	0.87	3.52
2033	3.58	0.62	8.11	0.87	3.52
Total	**14.33**	**2.47**	**32.43**	**3.46**	**14.08**

Notes: [a]Applicable to Proposed Action and Alternatives 1 and 2.
[b]Applicable to Alternative 3.

Proposed Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	310	37.51	6.31	85.68	9.16	21.63
Renovation	157	2.32	0.40	5.26	0.56	2.28
Demolitions	296	4.33	0.85	10.67	1.11	6.38
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**44.68**	**13.28**	**102.29**	**10.90**	**42.85**

Estimated Yearly Emissions - Proposed Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	11.17	3.32	25.57	2.73	10.71
2007	11.17	3.32	25.57	2.73	10.71
2008	11.17	3.32	25.57	2.73	10.71
2009	11.17	3.32	25.57	2.73	10.71
Total	**44.68**	**13.28**	**102.29**	**10.90**	**42.85**

Future Renovation						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	808	11.95	2.06	27.06	2.89	11.75
TOTAL:	**-**	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	2.99	0.52	6.77	0.72	2.94
2031	2.99	0.52	6.77	0.72	2.94
2032	2.99	0.52	6.77	0.72	2.94
2033	2.99	0.52	6.77	0.72	2.94
Total	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Pollutant Emissions from New Home Activities

New Construction Area	2,606.0	ft^2	**No. Sites**	1	
Renovation Area		ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area[1]	2,056.0	ft^2	**Depth**	6	inches
Concrete Area[1]	550.0	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.06	**Acres (area disturbed by ground breaking)**
Project Duration[2]	90	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0517
Emissions from Construction Equipment					
New Building Construction	0.1124	0.0188	0.2560	0.0273	0.0168
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0018	0.0004	0.0046	0.0005	0.0003
Concrete Paving Operations	0.0067	0.0012	0.0158	0.0017	0.0010
Total Emissions	**0.1210**	**0.0204**	**0.2764**	**0.0295**	**0.0698**

Notes:
1: It was assumed that the yard and driveway for each home would be equivalent to the gross sqare footage of each new home (driveway: 550 ft^2; yard: 2,056 ft^2)
2: It was assumed that it would take approximately 90 days to build each new home

Estimated Pollutant Emissions from Renovated Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area[1]	1,860.0	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[2]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0123
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0148	0.0026	0.0335	0.0036	0.0022
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0148**	**0.0026**	**0.0335**	**0.0036**	**0.0145**

Notes:

1: It was assumed that all home renovations, regardless of whole-house or partial, would result in the same amount of emissions

2: It was assumed that it would take approximately 30 days to renovate each new home

Estimated Pollutant Emissions from Demo Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area	1,575.0	ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[1]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0104
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0146	0.0029	0.0361	0.0038	0.0111
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0146**	**0.0029**	**0.0361**	**0.0038**	**0.0216**

Notes:

1: It was assumed that it would take approximately 30 days to fully demo home

Estimated Pollutant Emissions from Infrastructure Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	-	S/M
Asphalt Area[1]	132,000.0	ft^2	**Depth**	3.0	inches
Gravel/Dirt Area[2]	2,500.0	ft^2	**Depth**	6.0	inches
Concrete Area[2, 3, 4]	20,980.0	ft^2	**Depth**	10.0	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	3.57	**Acres (area disturbed by ground breaking)**
Project Duration[5]	365	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	12.5069
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.2615	5.6701	0.0715	0.0070	0.0052
Gravel/Dirt Paving Operations	0.0022	0.0005	0.0056	0.0006	0.0004
Concrete Paving Operations	0.2567	0.0456	0.6037	0.0659	0.0383
Total Emissions	**0.5204**	**5.7162**	**0.6808**	**0.0735**	**12.5508**

Notes:

1: It was assumed that approximately 1 mile (5,280 ft) of new road at a width of 25 ft will be added as a result of the project

2: It was assumed that the new playground would consist of approximate 2,500 ft^2 of gravel area and 2,500 ft^2 of concrete area

3: It was assumed that the new jogging track would be a 1/4 of a mile (1,320 ft) and would be 10 ft wide

Average Construction Equipment Usage Rates (hours)									Equipment Emission Factors (from AP-42, Volume 2 - Mobile Sources)				
	New Construction		Existing Facilities			Paving Operations							
Construction Equipment	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Demolition (per 1,000 ft^2)	Asphalt (per 1,000 yd^3)	Gravel/Dirt (per 1,000 yd^3)	Concrete (per 1,000 yd^3)	CO (lb/hr)	VOC (lb/hr)	NO_X (lb/hr)	SO_X (lb/hr)	PM_{10} (lb/hr)
Backhoe	2.690	2.194	0.666	0.225	-	-		-	1.794	0.304	1.260	0.137	0.112
Blower	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
Bulldozer	1.183	1.387	0.372	0.106	-	6.154	6.154	16.000	1.257	0.425	3.840	0.463	0.406
Concrete Truck	7.528	3.764	0.753	0.376	-	-		203.262	1.794	0.304	4.166	0.454	0.256
Crane	10.334	15.545	1.894	1.040	3.000	-		-	0.675	0.018	1.691	0.143	0.139
Dump Truck	4.228	3.401	0.961	0.239	7.960	10.954	40.129	40.129	1.794	0.304	4.166	0.454	0.256
Front-end Loader	2.680	2.518	0.771	0.184	4.000	-	16.000	16.000	0.572	0.291	1.890	0.182	0.172
Paver	-	-	-	-	-	8.000		-	0.675	0.183	1.691	0.143	0.139
Roller	-	-	-	-	-	23.906	23.906	-	0.304	0.083	0.862	0.067	0.050
Scraper	-	-	-	-	-	4.800		-	0.151	0.052	0.713	0.086	0.061
Striper	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
18-Wheel Truck	28.080	30.055	5.268	2.484	-	-		182.166	1.794	0.304	4.166	0.454	0.256

Construction Equipment Emission Factors								
	New Construction		Existing Facilities			Paving Operations		
Pollutant	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Demolition (lb/1,000 ft^2)	Asphalt (lb/1,000 yd^3)	Gravel/Dirt (lb/1,000 yd^3)	Concrete (lb/1,000 yd^3)
CO	86.288	84.385	15.907	6.907	18.594	427.979	96.146	792.713
VOC	14.400	13.588	2.742	1.129	3.639	22.763	21.455	140.825
NO_X	196.431	194.193	36.013	15.714	45.795	117.062	241.654	1,864.549
SO_X	20.968	20.522	3.844	1.670	4.771	11.515	25.581	203.523
PM_{10}	12.877	12.931	2.409	1.038	3.143	8.575	16.719	118.190

VOC Emissions from Asphalt Evaporation (AP-42)		
Density of Asphalt	68.56	lb/ft^3
Weight Percent of Asphalt which Evaporates	5	%

Notes: Cutback asphalt emission factors were used; however, emissions from hot mix asphalt are typically one order of magnitude less

Alternative 1 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	310	37.56	6.32	85.80	9.17	21.67
Renovation	157	2.32	0.40	5.26	0.56	2.28
Demolitions	296	4.33	0.85	10.67	1.11	6.38
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**44.74**	**13.29**	**102.42**	**10.92**	**42.88**

Estimated Yearly Emissions - Alternative 1 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	11.18	3.32	25.60	2.73	10.72
2007	11.18	3.32	25.60	2.73	10.72
2008	11.18	3.32	25.60	2.73	10.72
2009	11.18	3.32	25.60	2.73	10.72
Total	**44.74**	**13.29**	**102.42**	**10.92**	**42.88**

Future Renovation						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	808	11.95	2.06	27.06	2.89	11.75
TOTAL:	**-**	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	2.99	0.52	6.77	0.72	2.94
2031	2.99	0.52	6.77	0.72	2.94
2032	2.99	0.52	6.77	0.72	2.94
2033	2.99	0.52	6.77	0.72	2.94
Total	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Pollutant Emissions from New Home Activities

New Construction Area	2,610.0	ft^2	**No. Sites**	1	
Renovation Area		ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area[1]	2,060.0	ft^2	**Depth**	6	inches
Concrete Area[1]	550.0	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.06	**Acres (area disturbed by ground breaking)**
Project Duration[2]	90	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0518
Emissions from Construction Equipment					
New Building Construction	0.1126	0.0188	0.2563	0.0274	0.0168
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0018	0.0004	0.0046	0.0005	0.0003
Concrete Paving Operations	0.0067	0.0012	0.0158	0.0017	0.0010
Total Emissions	**0.1212**	**0.0204**	**0.2768**	**0.0296**	**0.0699**

Notes:
1: It was assumed that the yard and driveway for each home would be equivalent to the gross sqare footage of each new home (driveway: 550 ft^2; yard: 2,060 ft^2)
2: It was assumed that it would take approximately 90 days to build each new home

Estimated Pollutant Emissions from Renovated Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area[1]	1,860.0	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[2]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0123
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0148	0.0026	0.0335	0.0036	0.0022
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0148**	**0.0026**	**0.0335**	**0.0036**	**0.0145**

Notes:

1: It was assumed that all home renovations, regardless of whole-house or partial, would result in the same amount of emissions

2: It was assumed that it would take approximately 30 days to renovate each new home

Estimated Pollutant Emissions from Demo Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area	1,575.0	ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[1]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0104
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0146	0.0029	0.0361	0.0038	0.0111
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0146**	**0.0029**	**0.0361**	**0.0038**	**0.0216**

Notes:

1: It was assumed that it would take approximately 30 days to fully demo home

Estimated Pollutant Emissions from Infrastructure Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	-	S/M
Asphalt Area[1]	132,000.0	ft^2	**Depth**	3.0	inches
Gravel/Dirt Area[2]	2,500.0	ft^2	**Depth**	6.0	inches
Concrete Area[2, 3, 4]	20,980.0	ft^2	**Depth**	10.0	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	3.57	**Acres (area disturbed by ground breaking)**
Project Duration[5]	365	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	12.5069
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.2615	5.6701	0.0715	0.0070	0.0052
Gravel/Dirt Paving Operations	0.0022	0.0005	0.0056	0.0006	0.0004
Concrete Paving Operations	0.2567	0.0456	0.6037	0.0659	0.0383
Total Emissions	**0.5204**	**5.7162**	**0.6808**	**0.0735**	**12.5508**

Notes:

1: It was assumed that approximately 1 mile (5,280 ft) of new road at a width of 25 ft will be added as a result of the project

2: It was assumed that the new playground would consist of approximate 2,500 ft^2 of gravel area and 2,500 ft^2 of concrete area

3: It was assumed that the new jogging track would be a 1/4 of a mile (1,320 ft) and would be 10 ft wide

Average Construction Equipment Usage Rates (hours)									Equipment Emission Factors (from AP-42, Volume 2 - Mobile Sources)				
	New Construction		Existing Facilities			Paving Operations							
Construction Equipment	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Demolition (per 1,000 ft^2)	Asphalt (per 1,000 yd^3)	Gravel/Dirt (per 1,000 yd^3)	Concrete (per 1,000 yd^3)	CO (lb/hr)	VOC (lb/hr)	NO_X (lb/hr)	SO_X (lb/hr)	PM_{10} (lb/hr)
Backhoe	2.690	2.194	0.666	0.225	-	-		-	1.794	0.304	1.260	0.137	0.112
Blower	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
Bulldozer	1.183	1.387	0.372	0.106	-	6.154	6.154	16.000	1.257	0.425	3.840	0.463	0.406
Concrete Truck	7.528	3.764	0.753	0.376	-	-		203.262	1.794	0.304	4.166	0.454	0.256
Crane	10.334	15.545	1.894	1.040	3.000	-		-	0.675	0.018	1.691	0.143	0.139
Dump Truck	4.228	3.401	0.961	0.239	7.960	10.954	40.129	40.129	1.794	0.304	4.166	0.454	0.256
Front-end Loader	2.680	2.518	0.771	0.184	4.000	-	16.000	16.000	0.572	0.291	1.890	0.182	0.172
Paver	-	-	-	-	-	8.000		-	0.675	0.183	1.691	0.143	0.139
Roller	-	-	-	-	-	23.906	23.906	-	0.304	0.083	0.862	0.067	0.050
Scraper	-	-	-	-	-	4.800		-	0.151	0.052	0.713	0.086	0.061
Striper	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
18-Wheel Truck	28.080	30.055	5.268	2.484	-	-		182.166	1.794	0.304	4.166	0.454	0.256

Construction Equipment Emission Factors								
	New Construction		Existing Facilities			Paving Operations		
Pollutant	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Demolition (lb/1,000 ft^2)	Asphalt (lb/1,000 yd^3)	Gravel/Dirt (lb/1,000 yd^3)	Concrete (lb/1,000 yd^3)
CO	86.288	84.385	15.907	6.907	18.594	427.979	96.146	792.713
VOC	14.400	13.588	2.742	1.129	3.639	22.763	21.455	140.825
NO_X	196.431	194.193	36.013	15.714	45.795	117.062	241.654	1,864.549
SO_X	20.968	20.522	3.844	1.670	4.771	11.515	25.581	203.523
PM_{10}	12.877	12.931	2.409	1.038	3.143	8.575	16.719	118.190

VOC Emissions from Asphalt Evaporation (AP-42)		
Density of Asphalt	68.56	lb/ft^3
Weight Percent of Asphalt which Evaporates	5	%

Notes: Cutback asphalt emission factors were used; however, emissions from hot mix asphalt are typically one order of magnitude less

Alternative 2 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	624	69.12	11.64	157.92	16.88	39.72
Renovation	57	0.84	0.15	1.91	0.20	0.83
Demolitions	610	9.01	1.76	22.18	2.31	13.25
Infrastructure	-	0.52	5.72	0.68	0.07	12.55
TOTAL:	**-**	**79.49**	**19.26**	**182.69**	**19.47**	**66.36**

Estimated Yearly Emissions - Alternative 2 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	19.87	4.82	45.67	4.87	16.59
2007	19.87	4.82	45.67	4.87	16.59
2008	19.87	4.82	45.67	4.87	16.59
2009	19.87	4.82	45.67	4.87	16.59
Total	**79.49**	**19.26**	**182.69**	**19.47**	**66.36**

Future Renovation						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	808	11.95	2.06	27.06	2.89	11.75
TOTAL:	**-**	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	2.99	0.52	6.77	0.72	2.94
2031	2.99	0.52	6.77	0.72	2.94
2032	2.99	0.52	6.77	0.72	2.94
2033	2.99	0.52	6.77	0.72	2.94
Total	**11.95**	**2.06**	**27.06**	**2.89**	**11.75**

Estimated Pollutant Emissions from New Home Activities

New Construction Area	2,374.0	ft^2	**No. Sites**	1	
Renovation Area		ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area[1]	1,824.0	ft^2	**Depth**	6	inches
Concrete Area[1]	550.0	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.05	**Acres (area disturbed by ground breaking)**
Project Duration[2]	90	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0471
Emissions from Construction Equipment					
New Building Construction	0.1024	0.0171	0.2332	0.0249	0.0153
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0016	0.0004	0.0041	0.0004	0.0003
Concrete Paving Operations	0.0067	0.0012	0.0158	0.0017	0.0010
Total Emissions	**0.1108**	**0.0187**	**0.2531**	**0.0270**	**0.0637**

Notes:
1: It was assumed that the yard and driveway for each home would be equivalent to the gross sqare footage of each new home (driveway: 550 ft^2; yard: 1,824 ft^2)
2: It was assumed that it would take approximately 90 days to build each new home

Estimated Pollutant Emissions from Renovated Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area[1]	1,860.0	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[2]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0123
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0148	0.0026	0.0335	0.0036	0.0022
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0148**	**0.0026**	**0.0335**	**0.0036**	**0.0145**

Notes:

1: It was assumed that all home renovations, regardless of whole-house or partial, would result in the same amount of emissions

2: It was assumed that it would take approximately 30 days to renovate each new home

Estimated Pollutant Emissions from Demo Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area	1,588.0	ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[1]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0105
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0148	0.0029	0.0364	0.0038	0.0112
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0148**	**0.0029**	**0.0364**	**0.0038**	**0.0217**

Notes:

1: It was assumed that it would take approximately 30 days to fully demo home

Estimated Pollutant Emissions from Infrastructure Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	-	S/M
Asphalt Area[1]	132,000.0	ft^2	**Depth**	3.0	inches
Gravel/Dirt Area[2]	2,500.0	ft^2	**Depth**	6.0	inches
Concrete Area[2, 3, 4]	20,980.0	ft^2	**Depth**	10.0	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	3.57	**Acres (area disturbed by ground breaking)**
Project Duration[5]	365	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	12.5069
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.2615	5.6701	0.0715	0.0070	0.0052
Gravel/Dirt Paving Operations	0.0022	0.0005	0.0056	0.0006	0.0004
Concrete Paving Operations	0.2567	0.0456	0.6037	0.0659	0.0383
Total Emissions	**0.5204**	**5.7162**	**0.6808**	**0.0735**	**12.5508**

Notes:

1: It was assumed that approximately 1 mile (5,280 ft) of new road at a width of 25 ft will be added as a result of the project

2: It was assumed that the new playground would consist of approximate 2,500 ft^2 of gravel area and 2,500 ft^2 of concrete area

3: It was assumed that the new jogging track would be a 1/4 of a mile (1,320 ft) and would be 10 ft wide

Average Construction Equipment Usage Rates (hours)									Equipment Emission Factors (from AP-42, Volume 2 - Mobile Sources)				
	New Construction		Existing Facilities			Paving Operations							
Construction Equipment	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Demolition (per 1,000 ft^2)	Asphalt (per 1,000 yd^3)	Gravel/Dirt (per 1,000 yd^3)	Concrete (per 1,000 yd^3)	CO (lb/hr)	VOC (lb/hr)	NO_X (lb/hr)	SO_X (lb/hr)	PM_{10} (lb/hr)
Backhoe	2.690	2.194	0.666	0.225	-	-		-	1.794	0.304	1.260	0.137	0.112
Blower	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
Bulldozer	1.183	1.387	0.372	0.106	-	6.154	6.154	16.000	1.257	0.425	3.840	0.463	0.406
Concrete Truck	7.528	3.764	0.753	0.376	-	-		203.262	1.794	0.304	4.166	0.454	0.256
Crane	10.334	15.545	1.894	1.040	3.000	-		-	0.675	0.018	1.691	0.143	0.139
Dump Truck	4.228	3.401	0.961	0.239	7.960	10.954	40.129	40.129	1.794	0.304	4.166	0.454	0.256
Front-end Loader	2.680	2.518	0.771	0.184	4.000	-	16.000	16.000	0.572	0.291	1.890	0.182	0.172
Paver	-	-	-	-	-	8.000		-	0.675	0.183	1.691	0.143	0.139
Roller	-	-	-	-	-	23.906	23.906	-	0.304	0.083	0.862	0.067	0.050
Scraper	-	-	-	-	-	4.800		-	0.151	0.052	0.713	0.086	0.061
Striper	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
18-Wheel Truck	28.080	30.055	5.268	2.484	-	-		182.166	1.794	0.304	4.166	0.454	0.256

Construction Equipment Emission Factors								
	New Construction		Existing Facilities			Paving Operations		
Pollutant	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Demolition (lb/1,000 ft^2)	Asphalt (lb/1,000 yd^3)	Gravel/Dirt (lb/1,000 yd^3)	Concrete (lb/1,000 yd^3)
CO	86.288	84.385	15.907	6.907	18.594	427.979	96.146	792.713
VOC	14.400	13.588	2.742	1.129	3.639	22.763	21.455	140.825
NO_X	196.431	194.193	36.013	15.714	45.795	117.062	241.654	1,864.549
SO_X	20.968	20.522	3.844	1.670	4.771	11.515	25.581	203.523
PM_{10}	12.877	12.931	2.409	1.038	3.143	8.575	16.719	118.190

VOC Emissions from Asphalt Evaporation (AP-42)		
Density of Asphalt	68.56	lb/ft^3
Weight Percent of Asphalt which Evaporates	5	%

Notes: Cutback asphalt emission factors were used; however, emissions from hot mix asphalt are typically one order of magnitude less

Alternative 3 Action						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
New Construction	773	86.55	14.57	197.72	21.13	49.76
Renovation	57	0.85	0.15	1.93	0.21	0.84
Demolitions	1098	13.85	2.71	34.12	3.55	20.39
Infrastructure	-	0.88	11.40	0.98	0.11	24.02
TOTAL:	**-**	**102.13**	**28.83**	**234.75**	**25.00**	**95.00**

Estimated Yearly Emissions - Alternative 3 Action					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2006	25.53	7.21	58.69	6.25	23.75
2007	25.53	7.21	58.69	6.25	23.75
2008	25.53	7.21	58.69	6.25	23.75
2009	25.53	7.21	58.69	6.25	23.75
Total	**102.13**	**28.83**	**234.75**	**25.00**	**95.00**

Future Renovation						
Project	**Number of Units**	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
Renovation	957	14.33	2.47	32.43	3.46	14.08
TOTAL:	**-**	**14.33**	**2.47**	**32.43**	**3.46**	**14.08**

Estimated Yearly Emissions - Future Renovations					
YEAR	**CO (tons)**	**VOC (tons)**	**NO_X (tons)**	**SO_X (tons)**	**PM_{10} (tons)**
2030	3.58	0.62	8.11	0.87	3.52
2031	3.58	0.62	8.11	0.87	3.52
2032	3.58	0.62	8.11	0.87	3.52
2033	3.58	0.62	8.11	0.87	3.52
Total	**14.33**	**2.47**	**32.43**	**3.46**	**14.08**

Estimated Pollutant Emissions from New Home Activities

New Construction Area	2,401.0	ft^2	**No. Sites**	1	
Renovation Area		ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area[1]	1,851.0	ft^2	**Depth**	6	inches
Concrete Area[1]	550.0	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.06	**Acres (area disturbed by ground breaking)**
Project Duration[2]	90	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0476
Emissions from Construction Equipment					
New Building Construction	0.1036	0.0173	0.2358	0.0252	0.0155
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0016	0.0004	0.0041	0.0004	0.0003
Concrete Paving Operations	0.0067	0.0012	0.0158	0.0017	0.0010
Total Emissions	**0.1120**	**0.0189**	**0.2558**	**0.0273**	**0.0644**

Notes:
1: It was assumed that the yard and driveway for each home would be equivalent to the gross sqare footage of each new home (driveway: 550 ft^2; yard: 1,851 ft^2)
2: It was assumed that it would take approximately 90 days to build each new home

Estimated Pollutant Emissions from Renovated Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area[1]	1,882.0	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.04	**Acres (area disturbed by ground breaking)**
Project Duration[2]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0124
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0150	0.0026	0.0339	0.0036	0.0023
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0150**	**0.0026**	**0.0339**	**0.0036**	**0.0147**

Notes:

1: It was assumed that all home renovations, regardless of whole-house or partial, would result in the same amount of emissions

2: It was assumed that it would take approximately 30 days to renovate each new home

Estimated Pollutant Emissions from Demo Home Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	1	S/M
Asphalt Area		ft^2	**Depth**		inches
Gravel/Dirt Area	-	ft^2	**Depth**	6	inches
Concrete Area	-	ft^2	**Depth**	10	inches
Demolition Building Area	1,357.0	ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	0.03	**Acres (area disturbed by ground breaking)**
Project Duration[1]	30	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	0.0090
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0126	0.0025	0.0311	0.0032	0.0096
Asphalt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Gravel/Dirt Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Concrete Paving Operations	0.0000	0.0000	0.0000	0.0000	0.0000
Total Emissions	**0.0126**	**0.0025**	**0.0311**	**0.0032**	**0.0186**

Notes:

1: It was assumed that it would take approximately 30 days to fully demo home

Estimated Pollutant Emissions from Infrastructure Activities

New Construction Area	-	ft^2	**No. Sites**	1	
Renovation Area	-	ft^2	**No. Stories**	-	S/M
Asphalt Area[1]	264,000.0	ft^2	**Depth**	3.0	inches
Gravel/Dirt Area[2]	5,000.0	ft^2	**Depth**	6.0	inches
Concrete Area[2, 3, 4]	28,760.0	ft^2	**Depth**	10.0	inches
Demolition Building Area		ft^2			
Miscellaneous Land Area	-	ft^2			

Site Preparation for New Construction

Total Area of Site	6.84	**Acres (area disturbed by ground breaking)**
Project Duration[5]	365	**Days**

Construction Emissions

Construction Activity	CO (tons)	VOC (tons)	NO_X (tons)	SO_X (tons)	PM_{10} (tons)
Site Preparation/Ground Disturbance/Demo	0.0000	0.0000	0.0000	0.0000	23.9519
Emissions from Construction Equipment					
New Building Construction	0.0000	0.0000	0.0000	0.0000	0.0000
Existing Building Renovation	0.0000	0.0000	0.0000	0.0000	0.0000
Building Demolition	0.0000	0.0000	0.0000	0.0000	0.0000
Asphalt Paving Operations	0.5231	11.3402	0.1431	0.0141	0.0105
Gravel/Dirt Paving Operations	0.0045	0.0010	0.0112	0.0012	0.0008
Concrete Paving Operations	0.3518	0.0625	0.8275	0.0903	0.0525
Total Emissions	**0.8794**	**11.4037**	**0.9818**	**0.1056**	**24.0157**

Notes:

1: It was assumed that approximately 2 miles (10,560 ft) of new road at a width of 25 ft will be added as a result of the project

2: It was assumed that the new playground would consist of approximate 5,000 ft^2 of gravel area and 5,000 ft^2 of concrete area

3: It was assumed that the new jogging track would be a 1/4 of a mile (1,320 ft) and would be 10 ft wide

Average Construction Equipment Usage Rates (hours)									Equipment Emission Factors (from AP-42, Volume 2 - Mobile Sources)				
	New Construction		Existing Facilities			Paving Operations							
Construction Equipment	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Single Story (per 1,000 ft^2)	Multi-Story (per 1,000 ft^2)	Demolition (per 1,000 ft^2)	Asphalt (per 1,000 yd^3)	Gravel/Dirt (per 1,000 yd^3)	Concrete (per 1,000 yd^3)	CO (lb/hr)	VOC (lb/hr)	NO_X (lb/hr)	SO_X (lb/hr)	PM_{10} (lb/hr)
Backhoe	2.690	2.194	0.666	0.225	-	-		-	1.794	0.304	1.260	0.137	0.112
Blower	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
Bulldozer	1.183	1.387	0.372	0.106	-	6.154	6.154	16.000	1.257	0.425	3.840	0.463	0.406
Concrete Truck	7.528	3.764	0.753	0.376	-	-		203.262	1.794	0.304	4.166	0.454	0.256
Crane	10.334	15.545	1.894	1.040	3.000	-		-	0.675	0.018	1.691	0.143	0.139
Dump Truck	4.228	3.401	0.961	0.239	7.960	10.954	40.129	40.129	1.794	0.304	4.166	0.454	0.256
Front-end Loader	2.680	2.518	0.771	0.184	4.000	-	16.000	16.000	0.572	0.291	1.890	0.182	0.172
Paver	-	-	-	-	-	8.000		-	0.675	0.183	1.691	0.143	0.139
Roller	-	-	-	-	-	23.906	23.906	-	0.304	0.083	0.862	0.067	0.050
Scraper	-	-	-	-	-	4.800		-	0.151	0.052	0.713	0.086	0.061
Striper	-	-	-	-	-	16.000		-	12.100	0.410	0.320	0.017	0.021
18-Wheel Truck	28.080	30.055	5.268	2.484	-	-		182.166	1.794	0.304	4.166	0.454	0.256

Construction Equipment Emission Factors								
	New Construction		Existing Facilities			Paving Operations		
Pollutant	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Single Story (lb/1,000 ft^2)	Multi-Story (lb/1,000 ft^2)	Demolition (lb/1,000 ft^2)	Asphalt (lb/1,000 yd^3)	Gravel/Dirt (lb/1,000 yd^3)	Concrete (lb/1,000 yd^3)
CO	86.288	84.385	15.907	6.907	18.594	427.979	96.146	792.713
VOC	14.400	13.588	2.742	1.129	3.639	22.763	21.455	140.825
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Appendix D

Correspondence from Alabama State Historic Preservation Officer

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

LEE H. WARNER
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

February 4, 2000

Stacye A. Styron
5900 Carmichael Place
Montgomery, Alabama 36117

Re: AHC 00-0504
Demolition of Riverside Heights & Patterson Court
City of Montgomery
Montgomery County, Alabama

Dear Ms. Styron:

Upon review of the information forwarded by your office, the Alabama Historical Commission has determined that both of these sites are eligible for the National Register under Criterion C for their significance as early examples of public housing design in Alabama. We also believe they are eligible under Criterion A for their significance in community planning and development, government, and, for Patterson Court, ethnic heritage. The first phases of both were constructed beginning in 1935 as Public Works Administration direct-built public housing projects, and both were ready for occupation in 1937. Patterson Court was designed for African-American tenants and Riverside Heights was its white counterpart. They were two of the earliest federally funded housing projects in the State along with Birmingham's Smithfield Court (1936-38).

We would like to refer you to a draft historic context study on *Public Housing in the United States, 1933-1949* prepared by the National Conference of State Historic Preservation Officer in 1977. A copy is available at our office. Clearly, demolition of these properties would be an adverse effect. Mitigation should be determined in consultation with our office. Please contact us at your earliest convenience so we may begin this consultation.

We appreciate your efforts on this project and we look forward to working with you to its conclusion. Should you have any questions or comments, please contact Blythe Semmer of our office.

Sincerely,

for: Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/JBS/GCR

preserveALABAMA
ALABAMA HISTORICAL COMMISSION

September 27, 2004

Deborah K. Tharp
Command Cultural Resources Manager
Department of the Air Force Air Education and Training Command
HQ AETC/CEVN
266 F Street West
Randolph AFB TX 78150-4319

LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

tel 334 242•3184
fax 334 240•3477

Re: AHC 2004-1360
NR Eligibility WWII Barracks/Maxwell & Gunter
Montgomery County

Dear Ms. Tharp:

The Alabama Historical Commission agrees that the above referenced World War II Barracks (Row Houses) at Maxwell Air Force Base and Gunter Annex are *not eligible* for the National Register of Historic Places.

We appreciate your efforts to help us in preserving Alabama's non-renewable cultural resources. If you have questions or comments or if we may be of additional service, please contact Stacye Hathorn of our office and include the AHC project number referenced above.

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LDB/SGH/sgh

preserveALA
ALABAMA HISTORICAL COMMISSION

November 2, 2004

C. Michael McInnish
Montgomery Housing Authority
1020 Bell Street
Montgomery, Alabama 36104-3006

Re: AHC 2005-0019
Request for Determination of Eligibility for
Riverside Heights Development
Montgomery County

Dear Mr. McInnish:

The Alabama Historical Commission has determined that the Riverside Heights Development is *eligible* for the National Register of Historic Places. We appreciate your efforts to help us in preserving Alabama's non-renewable cultural resources. If you have questions or comments or if we may be of additional service, please contact Lindsey Breithaupt or Stacye Hathorn of our office and include the AHC project number referenced above.

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LDB/sgh

LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

tel 334 242•3184
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