

# Final Environmental Assessment for Aircraft Maintenance Operations Center

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**United States Air Force  
Air Education and Training Command  
14<sup>th</sup> Flying Training Wing  
Columbus Air Force Base, Mississippi**



**June 2014**

# Report Documentation Page

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**FINAL**  
**FINDING OF NO SIGNIFICANT IMPACT**  
**ENVIRONMENTAL ASSESSMENT**  
**AIRCRAFT MAINTENANCE OPERATIONS CENTER**  
**COLUMBUS AIR FORCE BASE, MISSISSIPPI**

**AGENCY:** Department of the Air Force, Air Education and Training Command (AETC), 14th Flying Training Wing (FTW), Columbus Air Force Base (AFB), Lowndes County, Mississippi (MS)

**BACKGROUND:** The Aircraft Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE), and T-38 Contractor Operated and Maintained Base Supply (T-COMBS) staff currently manage the daily flight schedule, direct all activities for 234 aircraft with over 85,000 flying hours each year, and provide launch/recovery support for 60,000 sorties each year. These personnel are currently located within three separate underutilized facilities: Building 640 (AMC), Building 634 (QAE), and Building 642 (T-COMBS). The existing facilities utilized for these functions are inadequate, with single-pane windows, un-insulated concrete walls, failing roofs, and failing heating, ventilation, and air conditioning (HVAC) systems. These facilities are greater than 50 years in age and were constructed in 1958 (Building 640) and 1959 (Buildings 634 and 642). The purpose of this project is to consolidate these three functions into one new Aircraft Maintenance Operations Center (AMOC) to continue mission activities. Consolidation of these functions is needed to reduce the Columbus AFB footprint and to assist in meeting Presidential Memorandum (*Memorandum – Disposing of Unneeded Federal Real Estate*, dated 10 June 2010) and U.S. Air Force (USAF) initiative (*Sustainable Installations and Air Force 20/20 by 2020*) goals of a 20 percent reduction in real property and associated operating costs by the year 2020. Additionally, the project is needed to remove facilities from the Airfield Clear Zone (CZ) (Building 634) and facilities that no longer meet Anti-Terrorism (AT) requirements (Building 640).

Pursuant to National Environmental Policy Act (NEPA), 32 Code of Federal Regulations 989, *Air Force Environmental Impact Analysis Process*, and other applicable regulations, Columbus AFB completed an environmental assessment of the potential environmental consequences of construction and demolition projects proposed to comply with the 20/20 by the year 2020. The attached Environmental Assessment (EA) evaluated the effects of the Proposed Action and No-action Alternative, and supports this Finding of No Significant Impact.

**PROPOSED ACTION:** The Proposed Action would consolidate the headquarters for the AMC, QAE, and T-COMBS staff into the AMOC. The AMOC project is primarily comprised of two components: demolition of three facilities and construction of one consolidated administrative facility. The proposed demolition of Buildings 634, 640, and 642 and construction of the consolidated administrative facility would present a 1,684 ft<sup>2</sup> footprint reduction, which would contribute to the 20/20 by the year 2020 plan.

Under the first phase of the Proposed Action, Buildings 634, 640, and 642 would be demolished, representing a total of 22,622 ft<sup>2</sup>. All functions would be temporarily relocated to trailers located on the site of the previously demolished Building 630 prior to any demolition

activities. To also accommodate AT requirements, a portion of Lockhart Street (9,250 ft<sup>2</sup>) would also be removed.

The second phase of the AMOC project would involve consolidating the functions of those buildings demolished during the first phase into a single new administrative facility (20,938 ft<sup>2</sup>) to support all functions. The construction of the new AMOC would be located near the Columbus AFB existing flightline, just outside of the CZ, in the footprint of the former Building 640. The building would be single story and would not interfere with imaginary surface clearances from the airfield. The new AMOC would be a LEED Silver-certified facility.

**NO-ACTION ALTERNATIVE:** Under the No-action Alternative, Columbus AFB would continue using the existing facilities, including Buildings 634, 640, and 642. Activities would continue to be located within underutilized and aging facilities that were not originally designed for the functions for which they are currently being used. The new AMOC would not be constructed; therefore, the AMC, QAE, and T-COMBS would not be consolidated into one new energy efficient facility. Additionally, Columbus AFB would not accomplish the footprint reduction achieved from the Proposed Action, and would be no closer to achieving a 20 percent reduction by the year 2020.

#### **SUMMARY OF FINDINGS FOR THE PROPOSED ACTION:**

**Air Quality** - The Proposed Action would result in short-term emissions during construction of new facilities, demolition of existing buildings, and removal of existing asphalt/concrete. There would be minimal ambient air impacts from these localized short-term emissions that would quickly dissipate away from the activity source. Long-term emissions would decrease primarily due to the consolidation of existing aging separate facilities into new energy efficient facilities. The increase in short-term emissions would not be considered regionally significant; therefore, impacts to air quality from the Proposed Action would not be considered significant.

**Noise** - There would be a short-term increase in noise levels from construction and demolition noise. The increased noise levels would be at or below baseline noise levels at potential noise-sensitive receptors. There would be no long-term increase in noise levels. Impacts from construction noise would be negligible.

**Land Use** - The demolition of Building 634 and new construction outside the Airfield CZ would result in a long-term decrease in potential for aircraft accidents within the Airfield CZ.

**Earth Resources** - Demolition and construction activities would occur in currently developed industrial areas and would not be expected to have any adverse impacts on overall earth resources. The proposed demolition areas have been previously disturbed by construction activities; buildings, underground utilities and drainage culverts, roadways and parking lots associated with the buildings currently exist. The soils in the vicinity of these activities have been altered over time and the proposed demolition areas are permanently disturbed with existing facilities. No topographic or geologic impacts are anticipated to occur in association with construction and demolition activities. The overall topography would remain largely unchanged, with the exception of any construction-related site grading. No significant impacts to earth resources are expected as a result of the Proposed Action.



**Water Resources** - The Proposed Action would have no discernable effects on water resources. Under the Proposed Action, there would be no withdrawal of groundwater and the Proposed Action would not affect water availability, endanger public health or safety, or violate laws or regulations adopted to protect or manage water resources. No impacts to surface water resources are anticipated as a result of the Proposed Action.

**Biological Resources** - As a result of the Proposed Action there would be minor short-term disturbances to wildlife from noise and construction; however, long-term impacts to wildlife are not anticipated to occur as the proposed project is located within previously developed areas. The Proposed Action would have no effect on vegetation, wildlife habitat, wetlands, or Federally-listed threatened or endangered species.

**Cultural Resources** - No archaeological or historic properties are present within the construction or demolition area; therefore, there would be no effect on historic properties or cultural resources. Additionally, none of the buildings proposed for demolition are NRHP-eligible.

**Hazardous Materials and Wastes** - There would be a long-term positive impact from potential abatement and removal of hazardous materials, such as asbestos-containing materials (ACM) and lead-based paint (LBP) that may be present in the buildings proposed to be demolished. However, there may be a short-term minor increase in waste containing ACM LBP from demolition activities. Additionally, the Proposed Action is not anticipated to interfere with the active installation restoration program (IRP); therefore, no impacts to or from active IRP sites would be expected as a result of the Proposed Action.

**Utilities and Infrastructure** - Implementation of the Proposed Action would result in upgrades to electrical infrastructure; however, there would be no change in electrical or natural gas demand. The short-term increase in solid waste generated as a result of construction and demolition would not exceed the capacity of the landfill. Since there would be no change to long-term population at Columbus AFB as a result of the Proposed Action, traffic volume would remain the same and quantities of municipal solid waste would not result in impacts to landfill capacity. Additionally, the Proposed Action would not generate a change in water or wastewater such that it exceeds the capacity of the utility providers or infrastructure.

The Proposed Action would result in minimal additional impervious surface and would therefore minimally increase stormwater runoff, which would be managed by existing stormwater retention and detention features. As a result of the Proposed Action, the increase in stormwater runoff would not be expected to exceed the capacity of the drainage ditches such that improvements could not accommodate the increase. Any short-term increases in soil erosion and sediment loadings in stormwater runoff would be managed by best management practices (BMPs). Impacts to utility systems would be less than significant.

**Socioeconomic Resources** - The expenditures and income associated with the Proposed Action would result in a short-term, beneficial impact to the local economy. There would be no change in local population or employment.

**Safety** - As a result of the proposed action there would be a long-term beneficial impact to ground safety as a result of achieving compliance with AT requirements and current fire safety codes.

During construction activities associated with the Proposed Action, additional measures would be implemented (e.g., signage, personal protective equipment [PPE], etc.) to protect the construction workers and the residents of the installation; therefore, the anticipated change in safety mishaps as a result of the Proposed Action would be less than significant.

**Environmental Justice** - There would be no disproportionate and adverse impacts to children, minority, or low-income populations.

**SUMMARY OF MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES:** Unless otherwise stated below, mitigation and Best Management Practices BMPs are not recommended.

**Air Quality** - BMPs to prevent short-term particulate matter in the air would include watering the disturbed area of construction; covering dirt and aggregate trucks and/or piles; preventing dirt carryover to paved roads; using erosion barriers and wind breaks; and using bio-diesel fuel in construction and transport vehicles.

**Noise** - BMPs recommended for construction noise include equipping heavy equipment with manufacturer's standard noise control devices; conducting construction activities between 0700 and 1900; and requiring workers to wear appropriate hearing protection.

**Earth Resources** - BMPs to prevent soil loss and minimize the exposure of surface soils during construction and demolition could include implementation of site-specific erosion control plans, thereby reducing the total amount of soil lost to the proposed activities. Fugitive dust from construction and demolition activities could be minimized by watering the soil.

**Biological Resources** - To minimize potential impacts to biological resources, any vegetation clearing associated with installation and abandonment activities should be conducted during the non-breeding season for most migratory birds (August through February). If these construction activities were to begin during the active breeding season, a site-specific survey for nesting migratory birds should be conducted at least two weeks prior to any vegetation clearing. If nests are found during the survey that contain eggs or young, construction should be postponed until the birds have left the nests. Only non-invasive species of vegetation would be utilized for re-vegetation.

**Hazardous Materials and Wastes** - No mitigation measures are proposed. Contingencies would be developed prior to construction to protect workers from exposure to ACM and LBP. ACM and LBP waste generated during demolition will be properly managed and disposed. Contingencies would also be developed to ensure that the appropriate IRP waiver from HQ AETC/A7C is obtained prior to construction activities conducted within the 100-foot buffer zone of the adjacent closed Installation Restoration Program site.

**Utilities and Infrastructure** - To minimize the potential for increased sediment loading of drainage areas and downstream surface water bodies, a Stormwater Pollution Prevention Plan (SWPPP) would be implemented that would include appropriate BMPs, such as use of silt fencing and rock-filter dams during construction activities. Solid wastes generated during construction and operation phases would be disposed of properly.

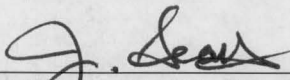
**Ground Safety** - Signage placed around the base to identify alternate parking areas and potentially hazardous work areas would help minimize congestion and the potential for accidents or injuries. BMPs to minimize construction safety incidents would include the use of signage and PPE at the construction site to protect workers and bystanders from sharp or heavy tools and construction materials, loose construction debris, large and noisy mobile equipment, as well as biological hazards. Construction and demolition efforts would comply with current AT requirements and fire safety codes.

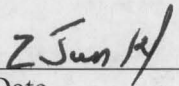
**SUMMARY OF FINDINGS FOR NO-ACTION ALTERNATIVE:** Under the No-action Alternative, there would be no impact to any resource areas and no change from baseline conditions. The Buildings 634, 640, and 642 would continue to be non-compliant with current AT requirements and fire safety codes, and Building 634 would remain within the Airfield CZ. Continued use of these buildings in baseline conditions may result in adverse impacts to safety.

**SUMMARY OF CUMULATIVE EFFECTS:** The cumulative impact of implementing these actions along with other past, present, and reasonably foreseeable future projects at and around Columbus AFB were assessed in the attached EA, and no significant cumulative impacts were identified.

**SUMMARY OF PUBLIC REVIEW AND INTERAGENCY COORDINATION:** A comment letter was received from U.S. Fish and Wildlife Service (USFWS) in response to the initial scoping request submitted for this EA on 1 October 2013. The USFWS stated that there are no federally protected species or associated habitats on Columbus AFB. The public review period was 9 March 2014 through 8 April 2014. No public comments were received.

**FINDING OF NO SIGNIFICANT IMPACT:** Based upon my review of the attached EA, I conclude that the Proposed Action will not have a significant direct, indirect, or cumulative impact upon the environment. Accordingly, the requirements of the NEPA, regulations promulgated by the President's Council on Environmental Quality, and 32 CFR Part 989 are fulfilled and an Environmental Impact Statement is not required at this time.

  
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JAMES R. SEARS, JR., Colonel, USAF  
Commander

  
\_\_\_\_\_  
Date



**Cover Sheet**



## FINAL

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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### Cover Sheet

**Responsible Agency:** Department of the Air Force, Air Education and Training Command (AETC), 14th Flying Training Wing (FTW), Columbus Air Force Base (AFB), Lowndes County, Mississippi (MS).

**Proposed Action:** To demolish three facilities (Buildings 634, 640, and 642) and consolidate these functions into one proposed new building, the Aircraft Maintenance Operations Center (AMOC).

**Point of Contact:** Mr. Frank Lockhart, Conservation Program Manager, 14 Civil Engineer Squadron/Civil Engineer Installation Management - Environmental Element (CES/CEIE), 555 Simler Boulevard, Suite 108, Columbus AFB, MS 39710-6010; United States; (662) 434-7958.

**Report Designation:** Final Environmental Assessment

**Abstract:** The Aircraft Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE), and T-38 Contractor Operated and Maintained Base Supply (T-COMBS) staff currently manage the daily flight schedule, direct all activities for 234 aircraft with over 85,000 flying hours each year, and provide launch/recovery support for 60,000 sorties each year. The Proposed Action would consolidate the headquarters for the AMC, QAE, and T-COMBS staff into the AMOC. These personnel are currently located within three separate underutilized facilities: Buildings 640 (AMC), Building 634 (QAE), and Building 642 (T-COMBS). The existing facilities utilized for these functions are inadequate, with single pane windows, un-insulated concrete walls, failing roofs, and failing Heating, Ventilation, Air Conditioning (HVAC) systems. These facilities are greater than 50 years in age and were constructed in 1958 (Building 640) and 1959 (Buildings 634 and 642). The purpose of this project is to consolidate these three functions into one new AMOC to continue mission activities. Consolidation of these functions is needed to reduce the Columbus AFB footprint and to assist in meeting Presidential Memorandum (*Memorandum – Disposing of Unneeded Federal Real Estate*, dated 10 June 2010) and U.S. Air Force (USAF) initiative (*Sustainable Installations and Air Force 20/20 by 2020*) goals of a 20 percent reduction in real property and associated operating costs by the year 2020. Additionally, the project is needed to remove facilities from the Airfield Clear Zone (CZ) (Building 634) and facilities that no longer meet Anti-Terrorism (AT) requirements (Building 640).

## **Privacy Advisory Notice**

Letters or other written comments provided 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 kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.



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*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **Acronyms and Abbreviations**



## FINAL

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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### LIST OF ACRONYMS

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20/20 by 2020	Sustainable Installations and Air Force 20/20 by 2020
ADP	Area Development Plan
AETC	Air Education and Training Command
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFH	Air Force Handbook
AFI	Air Force Instruction
AFTO	Air Force Technical Orders
AHPA	Archaeological and Historic Preservation Act
AIRFA	American Indian Religious Freedom Act
AMC	Aircraft Maintenance Contractor
AMOC	Aircraft Maintenance Operations Center
ARPA	Archaeological Resources Protection Act
AT	Anti-Terrorism
BMP	Best Management Practices
CAA	Clean Air Act of 1970
CatEx	Categorical Exclusion
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES/CEIE	Civil Engineer Squadron/Civil Engineer Installation Management-Environmental Element
CFR	Code of Federal Regulations
CWA	Clean Water Act of 1972
CZ	Clear Zone
DoD	U.S. Department of Defense
DoDI	DoD Instructions
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ESA	Endangered Species Act 1973
ft	Feet
ft <sup>2</sup>	Square Feet
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act of 1981
FR	Federal Register
FTW	Flying Training Wing

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**LIST OF ACRONYMS**

FWCA	Fish and Wildlife Coordination Act of 1980
GHG	Greenhouse Gas
HVAC	Heating, Ventilation, and Air Conditioning
IICEP	Intergovernmental and Interagency Coordination for Environmental Planning
LEED	Leadership in Energy and Environmental Design
MDEQ	Mississippi Department of Environmental Quality
MILCON	Military Construction
MMBtu	one million British Thermal Units
MPDES	Mississippi Pollutant Discharge Elimination System
MS	Mississippi
NAGPRA	Native American Graves Protection and Repatriation Act 1990
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
OSHA	Occupation Safety and Health Act
QAE	Quality Assurance Evaluators
Percent g	percentage of gravity
RCRA	Resource Conservation and Recovery Act of 1976
SAC	Strategic Air Command
SARA	Superfund Amendments and Reauthorization Act
SPL	sound pressure level
square feet	Ft <sup>2</sup>
SWPPP	Stormwater Pollution Prevention Plan
T-COMBS	T-38 Contractor Operated and Maintained Base Supply
TSCA	Toxic Substance Control Act
TWH	The White House
UFC	Unified Facilities Criteria
USC	United States Code
UST	Underground Storage Tank

## **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 and alternative actions, a description of the scope of the environmental review, identification of the decision to be made, identification of applicable regulatory requirements, and an introduction to the organization of the document.

### 1.1 PURPOSE OF AND NEED FOR ACTION

The purpose of the Proposed Action is to establish an Aircraft Maintenance Operations Center (AMOC) to continue maintaining the daily flight schedule, directing all activities for 234 aircraft with over 85,000 flying hours each year, and providing launch/recovery support for 60,000 sorties each year. Additionally, the AMOC would serve as headquarters for Aircraft Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE), and T-38 Contractor Operated and Maintained Base Supply (T-COMBS) staff. These personnel are currently located within three separate underutilized facilities: Buildings 640 (AMC), 634 (QAE), and 642 (T-COMBS). The existing facilities utilized for these functions are inadequate, with single pane windows, un-insulated concrete walls; and failing roofs and heating, ventilation, and air conditioning (HVAC) systems. These facilities are greater than 50 years in age and were constructed in 1958 (Building 640) and 1959 (Buildings 634 and 642).

Consolidation of the three underutilized and aging facilities is needed in order to be in compliance with the *Presidential Memorandum – Disposing of Unneeded Federal Real Estate*, dated 10 June 2010 (TWH, 2010). The Presidential Memorandum charges all federal agencies with disposing of unneeded real estate, with a focus on utilizing installations more efficiently by optimizing facility-space use, reducing energy and water operating costs, and sustaining only those facilities needed to conduct the mission (USAF, 2011a). The *Sustainable Installations and Air Force 20/20 by 2020* (20/20 by 2020) memorandum signed by the Vice Chief of Staff on 14 February 2011 is the USAF's initiative to comply with the Presidential Memorandum by placing an emphasis on reducing real property and associated operating costs by 20 percent by the year 2020. In order to accomplish this task, major air commands must consolidate operations into sustainable facilities and divest assets that are inefficient or excess to the needs of the USAF (USAF, 2011b). One pillar of the *Sustainable Installations and Air Force 20/20 by 2020* initiative involves consolidating operations into the right-size facilities and demolishing those that fail to meet space utilization criteria outlined in *Air Force Handbook* (AFH) 32-1084 (USAF, 2011a).

To meet this initiative, Columbus Air Force Base (AFB) has set a goal to reduce its facility footprint by approximately 290,000 square feet (ft<sup>2</sup>) by the year 2020 (an average of approximately 20,700 ft<sup>2</sup> each year) by combining like functions and replacing deteriorating facilities. It is Columbus AFB's intention to demolish as many facilities as possible prior to and in conjunction with other military construction (MILCON) projects (USAF, 2012a). The consolidation of the functions of the AMC, QAEs, and T-COMBS into one Leadership in Energy and Environmental Design (LEED)-certified administrative facility would present a 7.5 percent (1,684 ft<sup>2</sup>) reduction in the footprint of the AMOC functions. The Proposed Action and

consolidation of facilities would represent 0.6 percent of the overall Columbus AFB reduction goal to meet the 20/20 by 2020 initiative.

In addition to needing to meet the USAF 20/20 by 2020 initiative, the new AMOC would also meet Anti-Terrorism (AT) requirements, Air Force Technical Orders (AFTO), and Fire Safety Codes. Currently, Building 640 is neither in compliance with required AT and AFTO setbacks off of Lockhart Street. The Proposed Action would maximize standoff distances, consolidate parking, close portions of Lockhart Street, and therefore reduce the amount of needed road setbacks. Neither Building 640 nor 642 are compliance with current Fire Safety Codes.

Building 634 is currently located within the Columbus AFB Clear Zone (CZ). The CZ is comprised of areas identified at the ends of runways that possess a high potential for accidents and, therefore, have restricted land-use. CZs are typically obstruction-free areas (with the exception of features essential for aircraft operations). Therefore, Columbus AFB is also striving to eliminate CZ conflicts by recapitalizing and reconstructing facilities outside of the CZ (USAF, 2012a). The Proposed Action would remove this facility from within the CZ and reduce Columbus AFB CZ conflicts.

## **1.2 LOCATION OF THE PROPOSED ACTION**

Columbus AFB encompasses 4,919 acres located in rural Lowndes County, approximately 10 miles north of downtown Columbus, Mississippi (Figure 1-1). The base also has an Auxiliary Field near Shuqualak, Mississippi.

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

The National Environmental Policy Act of 1969 (NEPA) review requires Federal agencies to consider environmental consequences during 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), as detailed in *Air Force Instruction* (AFI) 32-7061, is accomplished through adherence to the procedures set forth in CEQ regulations (40 *Code of Federal Regulations* [CFR] Sections 1500-1508), U.S. Department of Defense (DoD) Instruction 4715.9 "Environmental Planning and Analysis," and 32 CFR Part 989 ("Environmental Impact Analysis Process"), 15 July 1999, as amended. 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.

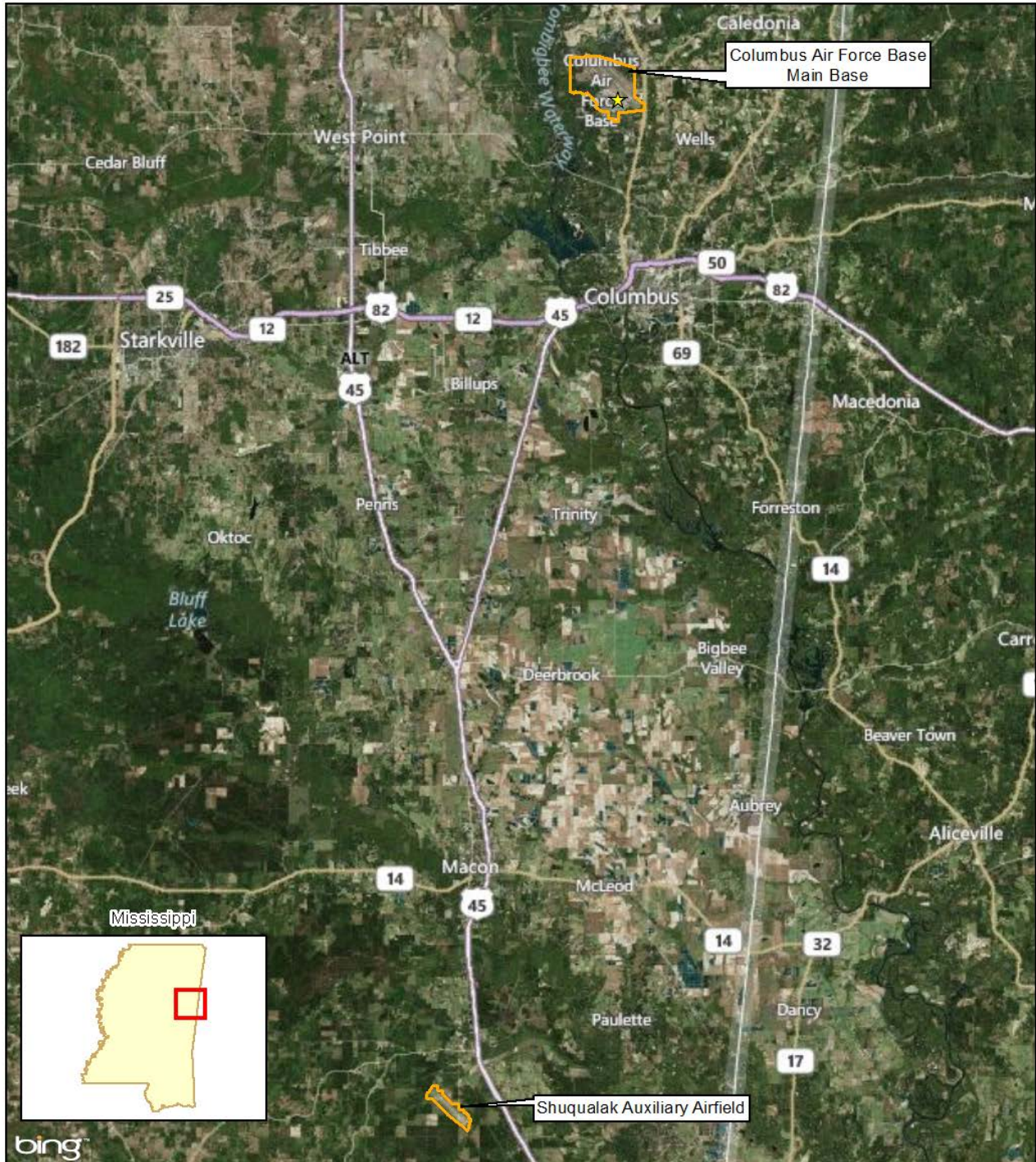
This Environmental Assessment (EA) identifies, describes, and evaluates the potential environmental impacts associated with the demolition and construction projects proposed for the AMOC. The potential environmental effects of taking no action are also described. As appropriate, the affected environment and environmental consequences of the action are described in either terms of a regional overview or a site-specific description to adequately define the resource using the most current information as the baseline condition.





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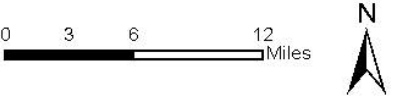
## PURPOSE AND NEED FOR ACTION



**Legend**

-  Columbus Air Force Base Boundary
-  Project Area

0 3 6 12 Miles



Imagery: ESRI, Bing Mapping Service

**Figure 1-1**  
**Site Vicinity Map**  
**Columbus Air Force Base**  
**Columbus, MS**

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the President on 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.

Through Intergovernmental and Interagency Coordination for Environmental Planning (IICEP), requests have been made for information on planned actions in the surrounding community. If any concurrent actions are identified during the EA process, they will be examined only in the context of potential cumulative impacts. 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.”

### **1.3.1 Resource Areas Addressed in Detail**

Resource areas that could be affected by the Proposed Action or No-action Alternative have been selected to allow for a comprehensive analysis of potential impacts. The intent of this EA is to meet the NEPA requirements established in 32 CFR Part 989. The following resource areas are discussed in detail in the EA:

- Air Quality
- Noise
- Land Use
- Natural Resources
- Water Resources
- Biological Resources
- Cultural Resources
- Hazardous Materials and Wastes
- Utilities and Infrastructure, including Transportation
- Socioeconomic Resources
- Ground Safety
- Environmental Justice

### **1.3.2 Resource Topics Eliminated from Detailed Analysis**

Resource areas that have been eliminated from further detailed study and the rationales for eliminating them are presented below:

- Aircraft Operations. The Proposed Action and No-action Alternative are not anticipated to change the number of active aircraft assigned to Columbus AFB, airfield facilities, or Columbus AFB runways. Therefore, aircraft operations would not be affected by the Proposed Action or No-action Alternative.

- Airspace Use and Management. The Proposed Action and No-action Alternative are not anticipated to have a significant change in the airspace associated with aircraft operations. Therefore, airspace compliance with laws, Executive Orders (EOs), and DoD instructions would not be affected by the Proposed Action or No-action Alternative.

#### **1.4 DECISION TO BE MADE**

This analysis evaluates the potential environmental consequences from the demolition of three facilities and the construction of the AMOC on Columbus AFB. Based on this analysis, Columbus AFB will determine whether to allow implementation of the Proposed Action or take no action (“No-action Alternative”). If it is determined, through this analysis, to proceed with the Proposed Action, Columbus AFB also must decide whether to accept the placement of this project near the flightline. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project, and must be available to inform decision-makers of the potential environmental impacts of selecting the Proposed Action or the No-action Alternative.

#### **1.5 APPLICABLE REGULATORY REQUIREMENTS**

This EA is part of the EIAP for the proposed project and was prepared in compliance with NEPA regulations. The following paragraphs describe the laws and regulations that apply or may apply to the Proposed Action and No-action Alternative.

##### **1.5.1 Interagency and Intergovernmental Coordination**

Federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action or No-action Alternative have been notified and consulted during the scoping period for this Proposed Action (01 October -30 October 2013). These agencies were also provided the EA for a 30-day review. A complete listing of the agencies consulted may be found in Chapter 6 and IICEP correspondence and responses are included in Appendix A. Responses received during the Draft EA 30-day review are incorporated into Appendix A of the Final EA. The public comment period was 9 March 2014 through 8 April 2014. No additional comments were received during the public comment period. This coordination fulfills the Interagency Coordination Act and EO 12372 *Intergovernmental Review of Federal Programs* (14 July 1982), which requires 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 AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*.

##### **1.5.2 Permits**

Applicable permits from local, state, and Federal agencies will be identified and obtained prior to construction or demolition activities associated with the Proposed Action. The construction contractor will identify and obtain appropriate permits for construction and demolition activities. All underground utility locations would need to be identified prior to any construction activities.

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### PURPOSE OF AND NEED FOR ACTION

The Proposed Action would require filing a Notice of Intent (NOI) for Stormwater Discharges under the Mississippi Pollutant Discharge Elimination System (MPDES) permit. This action would also include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) prior to construction activities. All applicable or potential permits are also discussed in more detail in the appropriate subsections of Chapters 3 and 4 of this document.

### 1.5.3 Other Regulatory Requirements

This EA considers all applicable local, state, and Federal laws and regulations. Applicable laws, regulations, and guidance documents identified for the Proposed Action are provided in Table 1-1. These regulations, laws, and guidance documents are more fully described and discussed in the appropriate subsections of Chapters 3 and 4 of this document.

**Table 1-1**  
**Applicable Environmental Laws and Regulations**

Federal Statutes and Policies
American Indian Religious Freedom Act (AIRFA), 42 United States Code (USC) 1996
Archaeological and Historic Preservation Act (AHPA), 1974, as amended, 16 USC 469, et. seq.
Archaeological Resources Protection Act (ARPA), 16 USC 470 aa-mm
Clean Air Act (CAA), 1970, as amended, 42. USC 7609, et. seq.
Clean Water Act (CWA), 1972, as amended, 33 USC 1251, et. seq., Sections 401 and 404
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9610
Endangered Species Act (ESA), 1973, as amended, 16 USC 1531, et. seq.
Energy Independence and Security Act of 2007 P.L. 110-140
Emergency Planning and Community Right-to-Know Act, 42 USC 11000, et seq.
Farmland Protection Policy Act (FPPA), 1981, 7 USC 4201, et. seq.
Fish and Wildlife Coordination Act (FWCA), 1980, as amended, 16 USC 661, et. seq.
Land and Water Conservation Fund Act, 1965, as amended, 16 USC 4601, et. seq.
Magnuson-Stevens Act Fishery Conservation and Management Act, 1996, as amended. National Marine Fisheries Service (NMFS)
National Historic Preservation Act (NHPA), 1966, as amended, 16 USC 470a, et. seq.
National Environmental Policy Act (NEPA), 1969, as amended, 42 USC 4321, et. seq.
Native American Graves Protection and Repatriation Act (NAGPRA), 1990, 25 USC 3001-13, et. seq.
Occupation Safety and Health Act (OSHA), 29 USC 651 et. seq.
Prevention of Significant Deterioration and Title V Greenhouse Gas (GHG) Tailoring Rule; Final Rule, 3 June 2010, 75 Federal Register (FR) 31514-01 and 40 CFR 51,52,70, et. al.
Pollution Prevention Act, 1990, 42 USC 6901 et. seq.
Protection of Historic Properties, 36 CFR Part 800

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Environmental Assessment - Aircraft Maintenance Operations Center  
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### PURPOSE OF AND NEED FOR ACTION

<b>Federal Statutes and Policies</b>
Resource Conservation and Recovery Act (RCRA), 1976, 42 USC 6901 et. seq.
Rivers and Harbors Act of 1899, 33 USC 403, Section 10
Superfund Amendments and Reauthorization Act (SARA), 42 USC 9601 et. seq.
Toxic Substance Control Act (TSCA), 15 USC 2601 et. seq.
Watershed Protection and Flood Prevention Act, 1954, 16 USC 1001, et. seq.
Wild and Scenic Rivers Act, 1968, as amended, 16 USC 1271, et. seq.
<b>State Regulations</b>
Mississippi Department of Environmental Quality (MDEQ), Mississippi Pollutant Discharge Elimination System (MPDES).
<b>Executive Orders (EO)</b>
Floodplain Management (EO 11988), 1977
Protection of Wetlands (EO 11990), 1977
Environmental Justice (EO 12898), 1994
<b>Executive Orders (EO)</b>
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423), 2007
Federal Facilities on Historic Properties (EO 13006), 1996
EO 12580, Superfund Implementation (EO 12580), 1987
Accommodation of Native American Sacred Sites (EO 13007), 1996
Migratory Bird Treaty Act, 16 USC 703-711, et. seq. (EO 13186), 2001
Protection of Children from Environmental Health Risks and Safety Risks (EO 13045), 1997
Intergovernmental Review of Federal Programs (EO 12372), 2009
<b>U.S. Department of Defense (DoD) Regulations</b>
DoD Instructions, Environmental Planning and Analysis (DoDI 4715.9), 3 May 1996
DoD Instructions, Cultural Resources Management (DoDI 4715.16), 18 September 2008
DoD Minimum Anti-Terrorism Standards for Buildings, Unified Facilities Criteria (UFC), UFC 4-010-01, 9 February 2012
Air Force Instructions, Disposal of Real Property (AFI 32-9004), 21 July 1994

## 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, a summary of the scope of the environmental review,

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### PURPOSE OF AND NEED FOR ACTION

identification of the decision to be made, identification of applicable regulatory requirements, and a description of the organization of the document.

- Chapter 2* Describes the history of the formulation of alternatives, identifies site selection standards for alternatives, identifies alternatives eliminated from further consideration, provides a detailed description of the Proposed Action, describes the No-action Alternative, summarizes other actions announced for the project sites and the surrounding community, provides a comparison matrix of environmental effects for all alternatives, identifies the preferred alternative, and describes measures to minimize or reduce impacts.
- Chapter 3* Contains a general description of the current conditions of the resources that could potentially 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 PROPOSED ACTION AND ALTERNATIVES**

This chapter has nine parts: a brief history of the formulation of alternatives, identification of selection standards for the alternatives, identification of alternatives eliminated from further consideration, a description of the Proposed Action, a description of the No-action Alternative, identification of other actions planned for the communities surrounding the proposed project site, a summary of environmental impacts of all alternatives, identification of the preferred alternative, and a table of measures to minimize impacts.

### **2.1 HISTORY OF THE FORMULATION OF ALTERNATIVES**

The formulation of alternatives for the Proposed Action was based on current mission related needs of the AMC, QAE, and T-COMBS staff currently working in Buildings 634, 640, and 642. The existing facilities do not meet the required AFTO, Fire Safety Codes, or AT requirements, and were identified by Columbus AFB as risks that the base does not want to continue to fund or maintain. Therefore, Buildings 634, 640, and 642 were included on the Columbus AFB Consolidated Demolition List (USAF, 2013a).

Following the publication of the 2010 Presidential Memorandum, Columbus AFB held a planning charrette on 16 July 2010, with the Air Force Civil Engineer Center (AFCEC), and Jacobs Engineering to review FY 2011 requirements for the AMC, QAE, and T-COMBS functions. The findings of the charrette were summarized in the Requirements Document for the AMOC (USAF, 2010a). The Requirements Document found that a joint facility could provide adequate space for each group to perform their three separate missions successfully, while meeting AFTO, Fire Safety Code, and AT requirements. Following the charrette and the issuance of the Air Force 20/20 by 2020 Plan, a Form 813, Request for Environmental Impact Analysis, was completed for the project on 17 May 2011 and is included in Appendix B.

The initial charrette and Form 813 included the demolition of Building 630 (18,450 ft<sup>2</sup>, which was used by AMC staff) to be relocated into a larger AMOC (22,605 ft<sup>2</sup>). However, since the 2010 charrette and completion of the Form 813, Columbus AFB determined that the AMC functions located in Building 630 could be permanently relocated to Building 218, with minor renovations. On 16 November 2011, 14 Civil Engineering Squadron/Civil Engineering Installation Element (CES/CEIE) completed a Categorical Exclusion (CatEx) for the demolition of Building 360 and the relocation of its functions to Building 218. Therefore, the demolition and relocation of Building 630 was removed from the AMOC project and are not part of the Proposed Action.

### **2.2 SELECTION STANDARDS FOR ALTERNATIVES**

To support the mission needs of AMC, QAE, and T-COMBS, and to meet the appropriate Air Force initiative and requirements, the proposed administrative facility must:

- Contribute to an overall reduction of footprint in order to meet the 20/20 by 2020 plan.

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### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

- Be located outside of the Airfield CZ.
- Be located to allow efficient application of force protection measures and comply with AFTO, Fire Safety Codes, and AT requirements.
- Be located in an area that would not impact mission critical facilities or operations.
- Locate the AMC, QAE, and T-COMBS functions in close proximity to each other, to the flightline, and to associated utilities.
- Be compatible with surrounding land use and not create undesirable land use interactions.
- Meet Unified Facilities Criteria (UFC), specifically UFC 3-101-01 for architecture.
- Be able to accommodate a facility that is sized to include all required components as outlined in *Air Force Handbook* (AFH) 32-1084, including required parking.
- Be an efficient facility of sound construction so that it does not meet characteristics of facilities identified under AFI 32-9004, Disposal of Real Property (e.g., deterioration beyond the point of economical repair; interferes with a site approved for construction; dangerous to people, likely to damage adjoining structures, or creates a nuisance; requires more than normal maintenance and its disposal will not create a deficiency; or design is obsolete, and it cannot be reasonably altered or economically used).
- Meet LEED silver certification requirements.
- Have necessary temporary workspace to be used during project construction for existing administrative functions.
- Have a facility exterior constructed to support the Columbus AFB “Showcase of the South” goals detailed in the 2040 Plan (USAF, 2012a).

A range of alternatives were considered; however, based upon project requirements, some alternatives were eliminated from further consideration. These alternatives are discussed in more detail in Subsection 2.3. The alternative identified as the Proposed Action is described in Subsection 2.4, and impacts anticipated from implementation of the Proposed Action are described in Chapter 4.

### 2.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Several potential alternatives were eliminated from further consideration as they would not fully meet Columbus AFB mission requirements. These eliminated alternatives included utilization of alternative facilities and the renovation of existing facilities, as detailed below.

Alternative locations on the Columbus AFB flightline were considered for the consolidated AMOC; however, these alternatives would cost more to complete. Initially, Columbus AFB considered moving the functions currently located in Buildings 634, 640, and 642 into existing facilities on the base flightline. However, these functions could not be co-located within any one facility as there was no other location on base that could accommodate the 20,938 ft<sup>2</sup> required for the consolidated functions. Therefore, these functions would need to be located in separate facilities and not within close proximity to one another. Since the activities would not be located

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### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

in one space, the Columbus AFB mission could be affected with delays or even stoppages that would congest the flightline and impact mission capable rates for training personnel. Additionally, these alternatives were determined to not be compatible with the surrounding area as existing facilities would also need to be demolished, relocating several existing tenants. Due to the lack of adequate space and potential disruptions to base activities, no specific facilities were assessed in greater detail by Columbus AFB for the potential relocation of Buildings 634, 640, and 642.

In lieu of constructing a new AMOC, Columbus AFB also considered renovating the existing Building 640. However, this was not a feasible option as Building 640 is not only in non-compliance with AT setback requirements, but also over 4,000 ft<sup>2</sup> smaller than the required 20,938 ft<sup>2</sup> for the consolidated functions. Therefore, a renovated Building 640 would not adhere to guidelines presented in the AFH 32-1084. Building 640 has been identified as a risk the base does not want to continue to fund or maintain and, therefore, has been included on the Columbus AFB Consolidated Demolition List (USAF, 2013a).

## 2.4 PROPOSED ACTION

The AMOC project, as described in the Flight Line Area Development Plan (ADP) and depicted in Figure 2-1, is primarily comprised of two components: the demolition of three facilities and the construction of one consolidated administrative facility. The proposed demolition of Buildings 634, 640, and 642 and construction of the consolidated administrative facility would present a 1,684 ft<sup>2</sup> footprint reduction, which would contribute to the 20/20 by 2020 plan.

### 2.4.1 Demolition

Under the first phase of the Proposed Action, Buildings 634, 640, and 642 (detailed in Table 2-1, below) would be demolished. The existing facilities do not meet the required AFTO, Fire Safety Codes, or AT requirements, and have been identified as a risk the base does not want to continue to fund or maintain and, therefore, have been included on the Columbus AFB Consolidated Demolition List (USAF, 2013a). Additionally, Building 634 is located within the CZ. All functions would be temporarily relocated to trailers located on the site of the previously demolished Building 630 prior to any demolition activities. To also accommodate AT requirements, a portion of Lockhart Street would also be removed.

**Table 2-1  
Proposed Facility Demolition**

Building Number	Building User	Year Constructed	Approximate Size (ft <sup>2</sup> )
634	Air Force Quality Assurance Evaluators (QAE)	1959	3,840
640	Aircraft Maintenance Contractors (AMC)	1958	16,362
642	T-38 COMBS (T-COMBS)	1959	2,420
<b>BUILDING SUBTOTAL</b>			<b>22,622</b>
--	Lockhart Street from Imes Street to C Place	--	9,250
<b>PROJECT TOTAL</b>			<b>31,872</b>

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**



**Legend**

- Proposed Construction
- Proposed Site of Temporary Trailers
- Facilities to be Demolished
- Buildings
- Accident Potential Zone I
- Clear Zone

Note: Building 630 has already been demolished

0 100 200 Feet

Imagery: ESRI, Bing Mapping Service

**Figure 2-1**  
**Proposed Action**  
**Columbus Air Force Base**  
**Columbus, MS**

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

**2.4.2 Construction**

The second phase of the AMOC project would involve consolidating the functions of those buildings demolished during the first phase into a single new administrative facility to support all functions as detailed in Table 2-2. The construction of the new AMOC would be located near the Columbus AFB existing flightline, just outside of the CZ in the footprint of the former Building 640. The building would be single story and would not interfere with imaginary surface clearances from the airfield. The new AMOC would be a LEED Silver-certified facility.

**Table 2-2  
Proposed Building Construction**

<b>Building User</b>	<b>Approximate Size (ft<sup>2</sup>)</b>
Air Force Quality Assurance Evaluators (QAE)	9,985
Aircraft Maintenance Contractors (AMC)	4,078
T-38 COMBS (T-COMBS)	6,875
<b>TOTAL</b>	<b>20,938</b>

**2.5 DESCRIPTION OF THE PRIMARY ALTERNATIVE**

The Alternative assessed in this EA is the No-action Alternative. The No-action Alternative would involve the continued use of the existing facilities, including Buildings 634, 640, and 642. Activities would continue to be located within underutilized and aging facilities that were not originally designed for the functions for which they are currently being used. The new AMOC would not be constructed; therefore, the AMC, QAE, and T-COMBS would not be consolidated into one new energy efficient facility. Additionally, Columbus AFB would not accomplish the footprint reduction achieved from the Proposed Action, and would be no closer to achieving a 20 percent reduction by the year 2020.

**2.6 OTHER ACTIONS ANNOUNCED FOR THE PROJECT AREAS AND SURROUNDING COMMUNITY**

This EA also considers the direct and indirect effects of cumulative impacts (40 CFR 1508.7) and concurrent actions (40 CFR 1508.25[1]). 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.”

The Proposed Action is a component of the Flight Line Area Development Plan (ADP). The Flight Line ADP is one of six ADPs (Operations Trainings Campus ADP, Administrative ADP, Community ADP, Industrial ADP, and Capability Expansion ADP) that together make up the 2040 Plan for Columbus AFB to identify the long-term goals of the Base (USAF, 2012a). Other



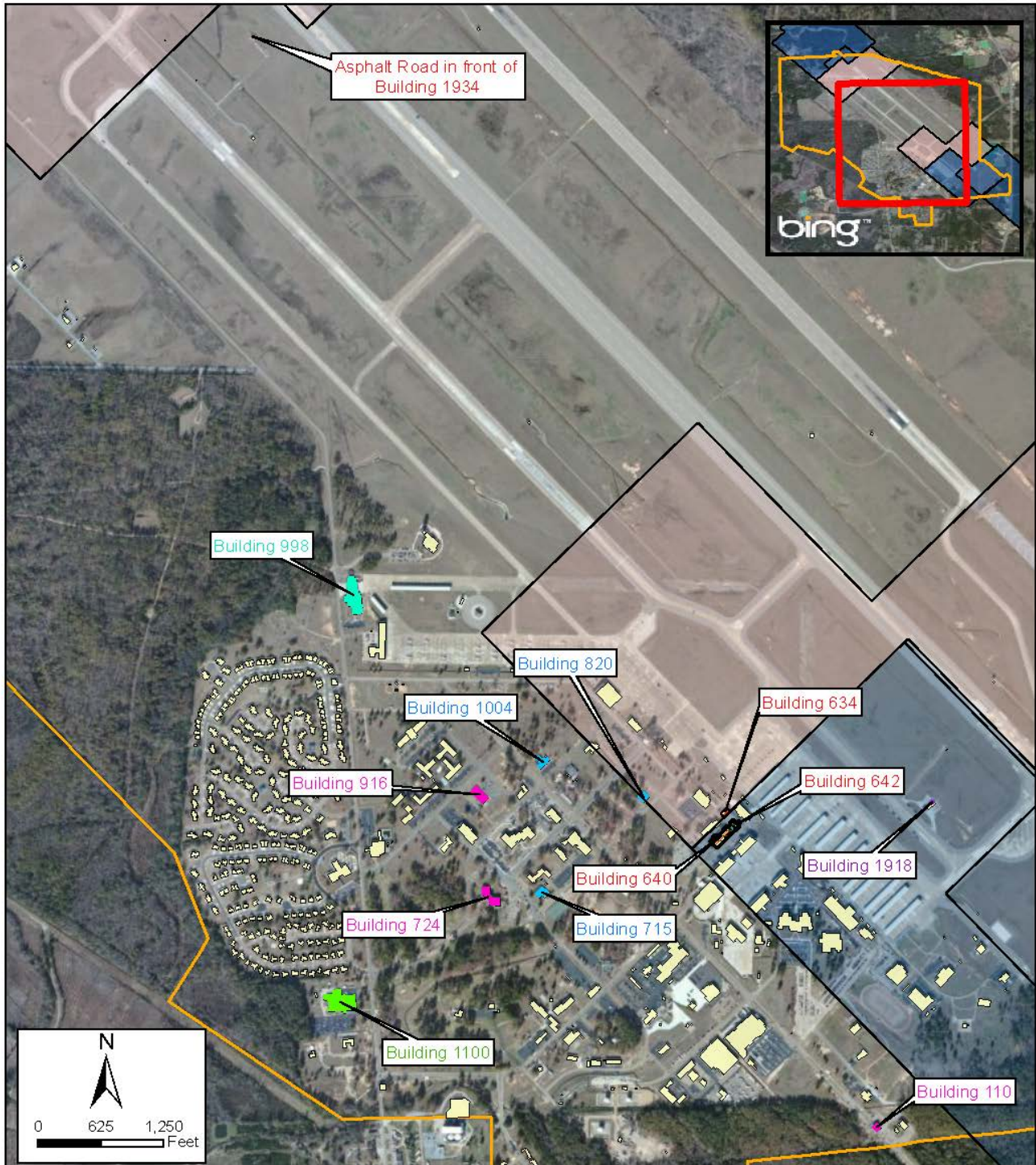
## DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

actions announced for Columbus AFB and the surrounding area that could occur during the same time period as the proposed or alternative actions are depicted in Figure 2-2 and described below.

- **Installation of a Fillstand Direct Feed System and Demolition of Underground Storage Tanks and Flightline Pump Shelter (Building 1918):** This project would include the installation of new transfer pumps at bulk storage and modifications at the fillstand location. This project will eliminate the requirement and costs associated with maintaining an operable Type II hydrant system: underground storage tanks (USTs), pumphouse, and its components. Upon successful commissioning of a new direct feed pumping system, the pumphouse, control room, USTs, and hydrant system will no longer be required and shall be removed. Demolition would consist of eight 50,000-gallon USTs, the flightline pump shelter, control room, and equipment in order to eliminate environmental non-compliances, inspections, and maintenance costs associated with the existing hydrant system, USTs, and pumphouse. This project received a CatEx based on the EA and Finding of No Significant Impact (FONSI) *Construct Spill Containment at Pumphouse 1*, which was signed and dated 17 March 2003.
- **Relocation and Demolition of the Photo Lab:** As a part of the Flightline ADP and included on the Columbus AFB five year disposal plan (USAF, 2013a), Building 820 would be demolished and relocated to Building 724 in May 2014. Total demolition of Building 820 would consist of 4,958 ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx A2.3.11 based on the EA and FONSI issued for the Strategic Air Command (SAC) Alert Facility, signed and dated 15 May 2008.
- **Relocation and Demolition of the Dental Clinic:** As a part of the Flightline ADP and included on the Columbus AFB 5-year disposal plan (USAF, 2013a), the Dental Clinic would be relocated to Building 1100, and the existing facility (Building 1004) will be demolished in March 2015. Total demolition of Building 1004 would consist of 5,824 ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx A2.3.11 based on the EA and FONSI issued for the SAC Alert Facility, signed and dated 15 May 2008.
- **Relocation and Demolition of the Library:** As a part of the Flightline ADP and included on the Columbus AFB 5-year disposal plan (USAF, 2013a), the Library would be relocated to Building 926 and the existing facility (Building 715) would be demolished in May 2015. Total demolition of Building 715 would consist of 7,831 ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx A2.3.11 based on the EA and FONSI issued for the SAC Alert Facility, signed and dated 15 May 2008.
- **Relocation and Demolition of the Education Center:** As a part of the Flightline ADP and included on the Columbus AFB 5-year disposal plan (USAF, 2013a), the Education Center would be relocated to Building 926 and the existing facility (Building 916) would be demolished in May 2015. Total demolition of Building 916 would consist of 11,340 ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**



Legend			
	Buildings		Proposed Smoking Shelter
	Columbus Air Force Base Boundary		Proposed Road Repair
	Accident Potential Zone I		Proposed Filistand Direct Feed System Project
	Clear Zone		Proposed Buildings where Functions will be Relocated
	Proposed Drafting Pit		Proposed Buildings for Demolition
	Proposed Action Construction		Proposed Action Demolition

**Figure 2-2**  
**Other Actions Announced for the Project Area**  
**Columbus Air Force Base**  
**Columbus, MS**

Note: Building 630 has already been demolished  
Imagery: ESRI, Bing Mapping Service

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

A2.3.11 based on the EA and FONSI issued for the SAC Alert Facility, signed and dated 15 May 2008.

- **Road Repair:** The existing asphalt road accessing Building 1934 would be repaired in June 2014. It is anticipated that this project would qualify for a CatEx A2.3.10, due to the size and scope of the project impacts.
- **Construct Smoking Shelter:** A 12- by 14-foot smoking shelter would be constructed adjacent to the Medical Clinic (Building 1100) during 2014. It is anticipated that this project would qualify for a CatEx A2.3.11, due to the size and scope of the project impacts.
- **Construction of a Drafting Pit:** A 40- by 60-foot concrete drafting pit will be constructed in June 2015 adjacent to the Fire Department (Building 998). Construction would also include the installation of a sump pump. It is anticipated that this project would qualify for a CatEx A2.3.10, due to the size and scope of the project impacts.
- **Routine Road Maintenance:** Routine road maintenance to include mill and overlay is planned to occur throughout the Base as necessary throughout 2014. It is anticipated that this project would qualify for a CatEx A2.3.10, due to the size and scope of the project impacts.

For this analysis, the actions identified above are addressed from a cumulative perspective and are analyzed in Chapter 4. Given that the actions above would be funded separately from the Proposed Action and implementation would not be dependent upon another, the actions would not be incorporated into the baseline. All of the actions identified above have been, or will be evaluated under separate NEPA cover and were incorporated in this analysis for their potential cumulative effect.

## **2.7 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES**

Table 2-3 summarizes the impacts of the Proposed Action and the No-action Alternative. This table provides a comparison of the effects of the alternatives to assist in the decision-making process.



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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

**Table 2-3  
Summary of Environmental Impacts**

<b>Resource</b>	<b>Proposed Action</b>	<b>No-action Alternative</b>
Air Quality	Short-term emissions during the construction of new facilities, the demolition of existing buildings, and the removal of existing asphalt/concrete. Minimal ambient air impacts from localized short-term emissions that would quickly dissipate away from the activity source. Decrease in the long-term operations emissions due to consolidation of existing aging separate facilities into a new single energy efficient.	No change from baseline conditions.
Noise	Personnel working at facilities near the project sites would experience short-term, elevated construction noise. Due to the distance from the site, outside noise levels from construction activities would be approximately 55 to 61 dBA at the park, which is below the 75 dBA noise level requisite to protect the public health and welfare, and would be considered a negligible impact.	No change from baseline conditions.
Land Use	Long-term decrease in potential for aircraft accidents within the Airfield CZ from the demolition of Building 634 and new construction outside the Airfield CZ.	No Change from baseline conditions. The potential for aircraft accidents within the Airfield CZ remains for Building 634.
Natural Resources	Erosion would be expected to occur over the short-term during construction operations, which would likely be localized to those proposed facility additions and immediate areas. In areas where impervious surfaces are created by construction, such as building foundations, no long-term soil erosion is anticipated. No topographic or geologic impacts are anticipated to occur in association with construction and demolition activities. The topography would undergo minor alterations, but the overall topography at the site would remain largely unchanged, with the exception of any construction-related site grading.	No change from baseline conditions.
Water Resources	The Proposed Action would have no discernable effects on water resources.	No change from baseline conditions.
Biological Resources	Wildlife and vegetation may experience a minor short-term disruption during construction activities; no long-term affect is anticipated to occur. No impact to wetlands or federally-listed threatened or endangered species. Migratory birds may be displaced during construction activities.	No change from baseline conditions.
Cultural Resources	No archaeological or non-archaeological Historic Properties are present within the project footprint; therefore, there would be no effect on Cultural Resources.	No change from baseline conditions.
Hazardous Materials and Waste	No long-term impacts to hazardous materials and waste. Short-term minor increase in waste containing asbestos-containing material (ACM) and lead-based paint (LBP) from demolition activities.	No change from baseline conditions.

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### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Resource	Proposed Action	No-action Alternative
Utilities and Infrastructure	No change in electrical or natural gas demand, in upgrades to electrical infrastructure, and in increase in solid, non-hazardous waste generated during from demolition and construction; however, sufficient capacity exists at landfill to accommodate the increase. No change to the volume of annual potable water consumed or wastewater generated. Short-term increases in soil erosion and sediment loadings in storm water runoff would be managed by best management practices. Long-term increase in storm water runoff due to total increased impervious cover.	No change from baseline conditions.
Socioeconomic Resources	The local economy would benefit from expenditures incurred from construction and demolition activities. There would be no change in local population or employment.	No change from baseline conditions.
Ground Safety	Long-term beneficial impact to ground safety as a result of achieving compliance with AT requirements and current fire safety codes.	Continued non-compliance with current AT requirements and fire safety codes may result in adverse impacts to safety.
Environmental Justice	There would be no disproportionate and adverse impacts to children, minorities, or low-income populations as a result of the Proposed Action.	No change from baseline conditions.

## 2.8 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The Air Force has evaluated each alternative to identify which one best complies with the mission, meets the operational goals of Columbus AFB, and accomplishes the purpose and need of the action. By demolishing Buildings 634, 640, and 642 and then constructing the new AMOC, the Proposed Action would provide an approximate 7.5 percent% reduction of footprint by AMOC functions, assisting the Air Force in achieving the 20/20 by 2020 plan. Additionally, the new facility would meet the required AFTO, Fire Safety Codes, and AT requirements, and would help eliminate CZ conflicts by removing Building 634. Subsection 2.3 of this EA describes other alternatives eliminated from further consideration. The No-action Alternative does not meet the purpose and need of the action. Therefore, the preferred alternative is the Proposed Action.

## 2.9 MEASURES TO MINIMIZE IMPACTS

Analysis of environmental impacts has determined that some mitigation measures would be necessary to prevent significant adverse effects. Additionally, Best Management Practices (BMPs) are proposed to help minimize impacts. Table 2-4 presents a summary of these mitigation measures and BMPs proposed under the Proposed Action and the No-action Alternative.

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

**Table 2-4  
Summary of Measures to Minimize Impacts**

<b>Resource</b>	<b>Measures to Minimize or Reduce Impacts and BMPs</b>
Air Quality	No mitigation is proposed. Best Management Practices (BMPs) would include watering the disturbed area of the construction, covering dirt and aggregate trucks and/or piles, prevention of dirt carryover to paved roads, and use of erosion barriers and wind breaks. The use of bio-diesel fuel in construction and transport vehicles.
Noise	No mitigation is proposed. BMPs to reduce construction noise include equipping noise-generating heavy equipment at the project site with the manufacturer's standard noise control devices, properly maintaining all equipment, limiting construction hours to between 0700 and 1900 hours, and reducing occupational exposure by requiring workers to wear appropriate hearing protection.
Land Use	No mitigation is proposed. Facility operations would be compatible with land use designations outlined in the current Land Use Plan. Construction of new buildings would be completed outside the Airfield CZ.
Natural Resources	BMPs to prevent soil loss and minimize the exposure of surface soils during construction and demolition could include implementation of site-specific erosion control plans, thereby, reducing the total amount of soil lost to the proposed activities.
Water Resources	No mitigation or BMPs are proposed.
Biological Resources	No mitigation is proposed. Impacts to vegetation and wildlife would be reduced by locating the project in developed area.
Cultural Resources	No mitigation or BMPs are recommended.
Hazardous Materials and Waste	No mitigation measures are proposed. Contingencies would be developed prior to construction to protect workers from exposure to ACM and LBP. ACM and LBP waste generated during demolition will be properly managed and disposed. Contingencies would also be developed to ensure the appropriate IRP waiver from HQ AETC/A7C is obtained prior to construction activities conducted within the 100-foot buffer zone of the adjacent closed Installation Restoration Program site.
Utilities and Infrastructure	No mitigation is proposed. To minimize potential for increased sediment loading of drainage areas and downstream surface waterbodies, a SWPPP would be implemented that would include appropriate BMPs, such as use of silt fencing and rock filter dams during construction activities. All solid wastes generated during construction and operation phases would be disposed of properly.
Socioeconomic Resources	No mitigation or BMPs are proposed.
Ground Safety	No mitigation is proposed. Construction and demolition efforts would comply with current AT requirements and fire safety codes.
Environmental Justice	No mitigation or BMPs are proposed.

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**Chapter 3**

**Affected Environment**



## **CHAPTER 3: AFFECTED ENVIRONMENT**

This chapter describes the current environmental resources conditions, either natural or man-made, that have the potential to be affected by the implementation of the Proposed Action and No-action Alternative and describes the current baseline conditions in sufficient detail to support the potential impacts presented in Chapter 4 Environmental Consequences.

### **3.1 GENERAL SETTING**

As described in Subsection 1.2, the project area on Columbus AFB is located in Lowndes County, northeastern Mississippi, approximately 9 miles north of Columbus, Mississippi (Figure 1-1), 60 miles west of Tuscaloosa, Alabama, 125 miles northeast of Jackson, Mississippi, and 125 miles southeast of Memphis, Tennessee. The installation is accessible by a state highway and local road systems, the Golden Triangle Regional Airport, and interstate bus service.

For nearly five decades, Columbus AFB has trained pilots for major conflicts in the nation's history, including World War II, Korean War, Cold War era, and Vietnam War. On 26 June 1941, the War Department approved an Army airfield for the Columbus area, and on 12 August 1941, land for the airfield was leased to the United States. In January 1942, shortly after the attack on Pearl Harbor, 100 enlisted men arrived to man the first skeleton organizations of the base, originally named Kaye Field in honor of Columbus-born World War I Captain Sam Kaye. In 1942, the installation was renamed Columbus Army Flying School and began instruction for 25 cadets. During World War II, a total of 7,412 students received their wings and commissions on the following aircrafts: AT-8s, AT-9s, AT 10s, Lockheed Hudson's, and later B-25s while the school earned multiple "Wings for Victory" safety awards.

With the end of World War II, training activities slowed significantly until 1950 when the field, now called Columbus Air Force Base, was reopened and operated as a contract flying school. In 1955, Columbus AFB was transferred to the SAC's Second Air Force, and in December 1957, SAC announced that Columbus AFB would become the home of a B-52 squadron and a KC-135 jet refueling tanker squadron. After 14 years as a SAC base, the wing began phasing down for deactivation in May 1969. With deactivation of the 454th Bombardment Wing on 1 July 1969, jurisdiction of Columbus AFB was returned to the Air Training Command. When the 3650th Pilot Training Wing (PTW) assumed command in 1969, Columbus AFB returned to its original mission of training pilots. The 3650th PTW was deactivated 1 June 1972, and the 14th Flying Training Wing (FTW) was activated in its place.

The primary mission of Columbus AFB is to train American and allied officers to fly jet-powered aircraft. The current mission at Columbus AFB is to provide Specialized Undergraduate Pilot Training (SUPT) for USAF personnel, as well as students from foreign countries. Aircraft used in training include the T-1A Jayhawk T-37 Tweet and T-38 Talon. The 14 FTW provides support for administrative, transportation and supply, civil engineering, communications, security, financial, religious, educational, legal, social and medical services, as well as morale, welfare and recreational facilities, and activities.

## 3.2 AIR QUALITY

### 3.2.1 Definition of the Resource

The U.S. Environmental Protection Agency (USEPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) under the Clean Air Act Amendments of 1990 (CAAA). The CAAA 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. According to the CAAA a source whose potential emission of all criteria pollutants exceeds 100 tons per year would be considered a major stationary source. A major stationary source for the emission of hazardous air pollutants (HAPs) would exceed the individual 10 tons per year and aggregate 25 tons per year emissions thresholds defined by the CAAA.

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<sub>2</sub>), ozone (O<sub>3</sub>), sulfur oxides (SO<sub>x</sub>, commonly measured as sulfur dioxide - SO<sub>2</sub>), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM<sub>10</sub>) and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter (PM<sub>2.5</sub>). Although O<sub>3</sub> is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered a pollutant when reporting emissions from specific sources, because O<sub>3</sub> is not typically emitted directly from most emissions sources. Ozone is formed in the atmosphere from its precursors, nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs), and is directly emitted from various sources. Thus, emissions of NO<sub>x</sub> and VOCs are commonly reported instead of O<sub>3</sub>. The NAAQS for the six criteria pollutants are shown in Table 3-1.

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 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 NAAQS are being met. "Non-attainment" 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 3-1  
National Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Standard Value</b>	<b>Standard Type</b>
CO		
1-hr average	35 ppm	Primary
8-hr average	9 ppm	Primary
NO <sub>2</sub>		
1-hr average	100 ppb <sup>a</sup>	Primary
Annual average	53 ppb	Primary and Secondary
O <sub>3</sub>		
8-hr average <sup>b</sup>	0.075 ppm	Primary and Secondary
Lead		
Rolling		
3 month Average	0.15 µg/m <sup>3</sup>	Primary
Quarterly average	1.5 µg/m <sup>3</sup>	
PM <sub>10</sub>		
24-hr average <sup>c</sup>	150 µg/m <sup>3</sup>	Primary and Secondary
PM <sub>2.5</sub>		
24-hr average <sup>d</sup>	35 µg/m <sup>3</sup>	Primary and Secondary
Annual average <sup>e</sup>	12 µg/m <sup>3</sup>	Primary
SO <sub>2</sub>		
1-hr average	75 ppb <sup>f</sup>	Primary
3-hr average	0.5 ppm	Secondary

Source: USEPA, 2012

CO=carbon monoxide

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

NO<sub>2</sub>=nitrogen dioxide

O<sub>3</sub>=ozone

SO<sub>2</sub>=sulfur dioxide

PM<sub>2.5</sub>=particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub>= particulate matter equal or less than 10 micrometers in diameter

ppb = parts per billion

ppm = parts per million

<sup>a</sup> The 98<sup>th</sup> Percentile, averaged over 3 years.

<sup>b</sup> 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 0.075 ppm.

<sup>c</sup> The 24-hour standard for PM<sub>10</sub> is not to be exceeded more than once per year on average over 3 years.

<sup>d</sup> The PM<sub>2.5</sub> 24-hour standard is based on the 3-year average 98th percentile of 24-hour concentrations at each population-oriented monitor.

<sup>e</sup> The PM<sub>2.5</sub> annual standard is based on 3-year average of weighted annual mean concentration from single or multiple community monitors.

<sup>f</sup> The 99<sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years.

The CAAA requires federal actions to conform to any applicable state implementation plan (SIP). USEPA has promulgated regulations implementing this requirement (USEPA, 2011). A SIP must be developed to achieve the NAAQS in non-attainment areas (i.e., areas not currently attaining the NAAQS for any pollutant) or to maintain attainment of the NAAQS in maintenance areas (i.e., areas that were non-attainment areas but are currently attaining that NAAQS). General conformity refers to federal actions other than those conducted according to specified transportation plans (which are subject to the Transportation Conformity Rule). Therefore, the General Conformity Rule applies only to non-transportation actions in non-attainment or maintenance areas. Such actions must perform a determination of conformity with the SIP if the

emissions resulting from the action exceed applicability thresholds specified for each pollutant and classification of non-attainment. Both direct emissions from the action itself and indirect emissions that may occur at a different time or place but are an anticipated consequence of the action must be considered. The Transportation Conformity Rule does not apply to this project.

**3.2.2 Affected Environment**

Columbus AFB is not a major stationary source as defined by the CAAA. Potential emissions of all criteria pollutants do not exceed the 100 tons per year major source threshold. Columbus AFB is also not considered a major stationary source for the emission of hazardous air pollutants (HAPs) because potential emissions are below the individual 10 tons per year and aggregate 25 tons per year emissions thresholds. Columbus AFB is a synthetic minor operator under the State of Mississippi and Federally Enforceable Air Pollution Control (APC) Permit 1680-00007. Table 3-2 presents the Columbus AFB 2012 actual air emissions from stationary sources.

**Table 3-2  
Columbus AFB 2012 Actual Air Emissions from Stationary Sources**

<b>Pollutant</b>	<b>Actual Emissions (tpy)</b>
Carbon Monoxide	9.0
Nitrogen Oxides	5.2
PM <sub>10</sub>	3.0
PM <sub>2.5</sub> <sup>a</sup>	3.0
Sulfur Oxides	0.38
VOC	20.1
Maximum Individual HAP (Benzene)	0.059
Total all HAPs	1.5

Source: WESTON, 2013

HAP = hazardous air pollutant

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

tpy = tons per year

VOC = volatile organic compounds

<sup>a</sup> Assumed PM<sub>2.5</sub> = PM<sub>10</sub> emissions.

The emissions presented in Table 3-2 are from a variety of sources that are located throughout Columbus AFB. The emission sources at Columbus AFB include abrasive blasting, external combustion, stationary internal combustion engine equipment, jet engine testing, paint spray booths (surface coating), welding operations, and the woodworking/fiberglass repair operations. Fugitive sources are those whose emissions cannot reasonably pass through a vent, stack, or functionally equivalent opening. Fugitive emission sources at Columbus AFB include pesticide application, miscellaneous chemical usage, non-destructive inspection, fuel storage, fuel spills, fuel transfer, gasoline storage and dispensing operations, fire fighter training, welding operations, and solvent cleaning tanks. Within the project area, minor emission sources are typically associated with boilers, as detailed in Table 3-3, that represent only a fraction of the base wide emissions shown in Table 3-2.

**Table 3-3  
Existing Emission Sources Within The Project Area**

<b>Building</b>	<b>Emission Point Number</b>	<b>Process</b>	<b>Description</b>
634	C634BOILER1	External Combustion	Hot Water Boiler, 0.526 MMBtu, Natural Gas
640	C640BOILER1	External Combustion	Steam Boiler, 1.08 MMBtu, Natural Gas
642	C642BOILER1	External Combustion	Hot Water Boiler, 0.51 MMBtu, Natural Gas
640	C640ATANK2	Fuel Storage Tanks	70-gal Diesel Aboveground Horizontal Fixed Roof tank
640	CICOM029 (AE-001-029)	Internal Combustion	Diesel Generator (7.5 kW) (10 hp)

Source: WESTON, 2013

kW = kilowatt

hp = horse power

MMBtu = one million British Thermal Units

### **3.2.3 Regional Air Quality**

Columbus AFB is located in Lowndes County, which is within the Northeast Mississippi Intrastate AQCR (AQCR 135). AQCR 135 consists of the following counties: Alcorn, Attala, Benton, Calhoun, Carroll, Chickasaw, Choctaw, Clay, Grenada, Holmes, Itawamba, Kemper, Lafayette, Leake, Lee, Lowndes, Marshall, Monroe, Montgomery, Neshoba, Noxubee, Oktibbeha, Panola, Pontotoc, Prentiss, Tate, Tippah, Tishomingo, Union, Webster, Winston, and Yalobusha. The entire AQCR 135 is currently USEPA designated as an attainment area for all criteria pollutants. Therefore, Columbus AFB is not subject to the General Conformity regulations (40 CFR Parts 6, 51 and 93).

### **3.2.4 Greenhouse Gases**

There are six primary Greenhouse Gases (GHGs) of concern: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). The emissions of each GHG are measured based on their global warming potential (GWP), the universal unit of measurement to express how much a given mass of greenhouse gas is estimated to contribute to climate change. Table 3-4, on the following page, lists the GWP of the six primary GHGs (USEPA, 2013a).

Only three of the GHGs are considered in the emissions from the Proposed Action. These three GHGs, CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, represent the majority of carbon dioxide equivalent (CO<sub>2eq</sub>) associated with Proposed Action operations. The other GHGs were not considered in the potential emissions from the Proposed Action as they are presumed to not be emitted. HFCs are most commonly used in refrigeration and air conditioning systems while PFCs and SF<sub>6</sub> are predominantly emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. None of these are part of the Proposed Action.

**Table 3-4  
Global Warming of GHGs**

Gas	Chemical Formula	Global Warming Potential
Carbon dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	21
Nitrous oxide	N <sub>2</sub> O	310
Hydrofluorocarbons	HFCs	various
Perfluorocarbons	PFCs	various
Sulfur hexafluoride	SF <sub>6</sub>	23,900

Source: USEPA, 2013a

Direct emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O occur naturally to the atmosphere, but human activities have increased global GHG atmospheric concentrations. The 2011 total United States GHG emissions were 6,702,300,000 metric tons of CO<sub>2eq</sub> (USEPA, 2013a). The United States total GHG emissions have risen 8.4 percent from 1990 to 2011 (USEPA, 2013a).

Columbus AFB is not subject to the annual reporting requirements of CO<sub>2eq</sub> from stationary source fuel combustion, as required by 40 CFR Part 98 - Mandatory Greenhouse Gas Reporting.

### 3.3 NOISE

#### 3.3.1 Definition of the Resource

Noise is typically defined as unwanted sound that may annoy people by interfering with ordinary daily activities, such as communication or sleep (FICON, 1992). 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.

Sound is a series of vibrations (energy) transmitted through a medium that are perceived by a receiver. Sound varies in intensity and frequency. It is measured by accounting for the energy level represented by the amplitude (volume) and frequency (pitch) of those vibrations and comparing that to a baseline standard. Sound pressure level (SPL) described in decibels (dB) is used to quantify sound intensity (FICON, 1992). The decibel is the accepted standard unit for describing levels of sound. Decibels are expressed in logarithmic units to account for the variations in amplitude. On the dB scale, an increase of 3 dB represents a doubling of sound energy. A difference on the order of 10 dB represents a subjective doubling of loudness (FICON, 1992). Therefore, an event that generates 60 dB of sound is twice as loud as one that generates 50 dB.

The Day-Night Average Sound Level (DNL) is a description of ambient noise exposure over an extended period of time. DNL is the metric recognized by the federal government for measuring noise and its impacts on humans. It describes a receiver's cumulative noise exposure from all events occurring during a 24-hour period; events occurring between 2200 to 0700 hours

(“environmental night”) are increased by 10 dB to account for greater nighttime sensitivity to noise events. The SPL represented by a given decibel value is usually adjusted to make it more relevant to sound that the human ear hears especially well; for example, an “A-weighted” decibel (dBA) was developed to measure sound similar to the way the human hearing system responds. It is derived from emphasizing mid-range frequencies to which the human ear responds especially well and de-emphasizing the lower and higher range frequencies. The adjustments in amplitude, established by the American National Standards Institute (ANSI), are applied to the frequency content of the sound (ANSI, 1983).

The Maximum Sound Level ( $L_{\max}$ ) is the peak value of all the A-Weighted Sound Levels that occur during a noise event. The limitation of this metric for noise (annoyance) analysis is that peak sound level without a context of duration or time of day does not adequately address annoyance. For example, most would agree that a short-duration siren blast (~110 dB) that occurs once per day around 1300 hours is less annoying than a 95 dB  $L_{\max}$  event (a jackhammer in a construction site) that lasts for 6 hours, every day and occurs at 2300 hours. Although the highest dBA level measured during an event (i.e., maximum sound level,  $L_{\max}$ ) is the most easily understood descriptor for a noise event, alone it provides little information. Specifically, it provides no information concerning either the duration of the event or the amount of sound energy. Thus, sound exposure level (SEL), which is a measure of the physical energy of the noise event and accounts for both intensity and duration, is used for single event noise analysis.

The potential for permanent hearing loss arises from direct exposure to noise on a regular, continuing long-term basis to levels about 75 dBA. Hearing loss is not expected in people exposed to 75 dBA or less for 8 hours per day, as long as noise exposure over the remaining 16 hours per day is low enough to not substantially contribute to the 24-hour average (USEPA, 1974).

### 3.3.2 Affected Environment

The ambient noise environment at Columbus AFB is affected mainly by aircraft operations, which is characteristic of most Air Force installations with a flying mission. Columbus AFB conducts two flying training programs: Specialized Undergraduate Pilot Training (SUPT) and Introduction to Fighter Fundamentals (IFF) (USAF, 2012b). Since Columbus AFB is primarily a training base, most operations are conducted during daylight hours and on weekdays. Only about two percent of the total daily operations occur at night (2200 to 0700) (USAF, 2012b). The Base controls and schedules missions to keep noise levels low, especially at night, and aircraft maintenance engine run-up locations have been established in areas to minimize noise for the surrounding areas.

The Air Force engages in a program of extensive local community outreach to facilitate land use planning to foster the establishment of compatible uses in the vicinity of the installations. The Air Installation Compatible Use Zone (AICUZ) program at Columbus AFB is an ongoing process. AICUZ provides guidance to air bases and local communities in planning land uses compatible with airfield operations by describing existing airfield noise and flight safety zones

on and near USAF installations. Columbus AFB's most recent AICUZ document was released in 2012 (USAF, 2012b).

The Proposed Action is located in close proximity to the active runway and aircraft maintenance operations. According to the AICUZ, based on the average busy day aircraft operations, Building 640 is currently located within the DNL 70-74 dB noise contour. Buildings 634 and 642 are located partially in the DNL 70-74 dB noise contour and partially in the DNL 75-79 dB noise contour (USAF, 2012b) (see Figure 3-1).

Buildings 456, 449, 636, and 637 are located within the noise impact area of the Proposed Action. Buildings 449 and 636 are located in the DNL 70-74 dB noise contour; Building 456 is located partially in the DNL 70-74 dB noise contour and partially in the DNL 75-79 dB noise contour; and Building 637 is located in the DNL 75-79 dB noise contour. Due to the 20 dB decrease in noise levels that result from noise attenuating properties of windows and walls, it is expected that these facilities experience baseline interior average noise levels below DNL 55-59 dB (U.S. Navy, 2005).

### 3.3.3 Noise-Sensitive Receptors

A noise-sensitive receptor is commonly defined as the occupants of any facility where a state of quietness is a basis for use such as a residence, hospital, or church. The closest potential noise-sensitive receptor to the project area is a park located approximately 850 feet southwest of the site (see Figure 3-1). The park is a recreational area that includes a track, playground equipment, two baseball diamonds, basketball courts, and tennis courts.

## 3.4 LAND USE

### 3.4.1 Definition of the Resource

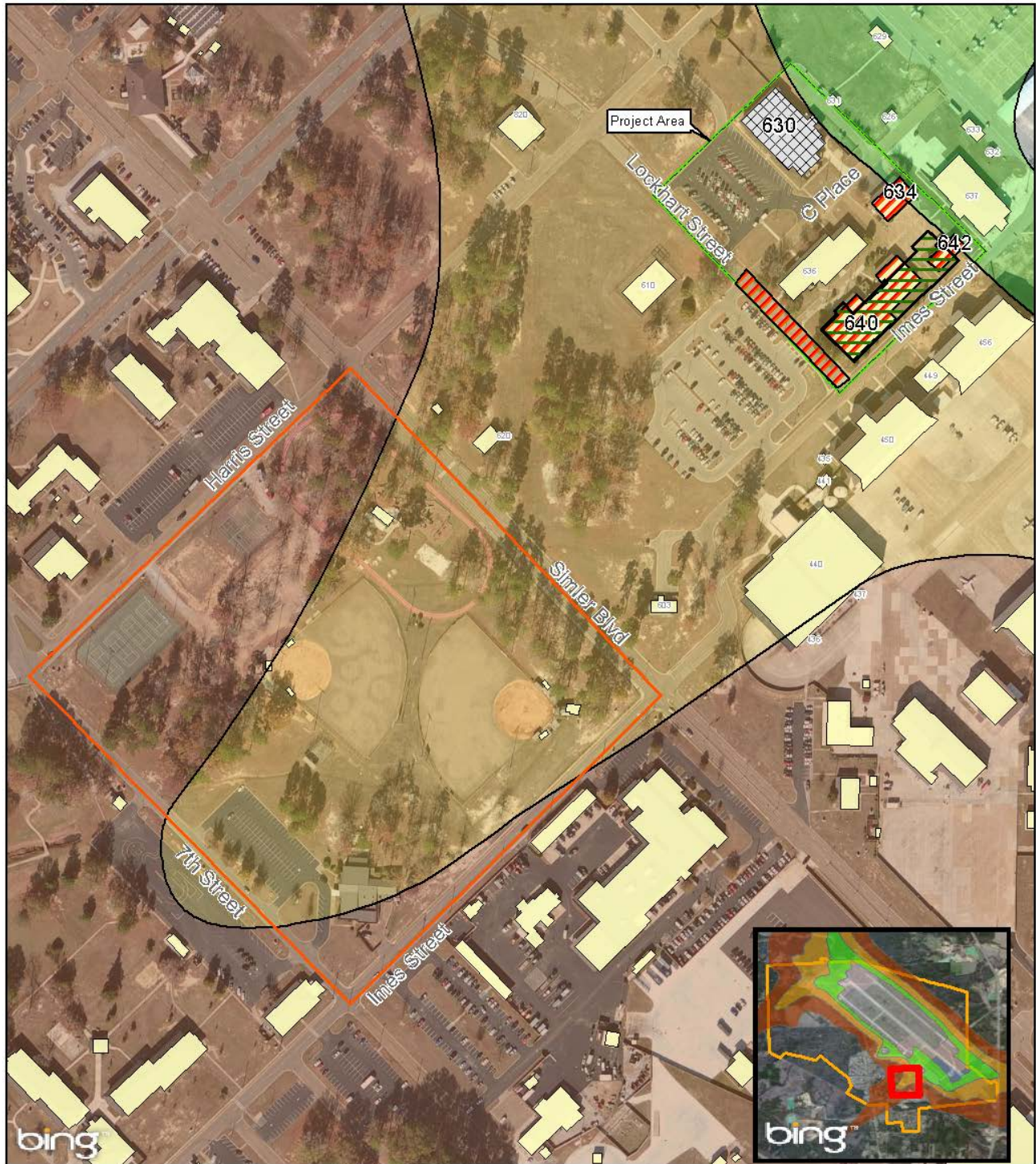
Land use refers to the activities that take place in a particular area and generally describes the human modification of land, often for residential or economic purposes. Management plans and zoning regulations are used to determine the type and extent of land use allowable in areas and are often intended to protect environmentally sensitive areas.

### 3.4.2 Affected Environment

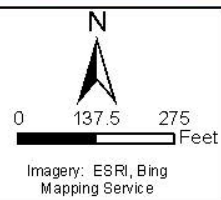
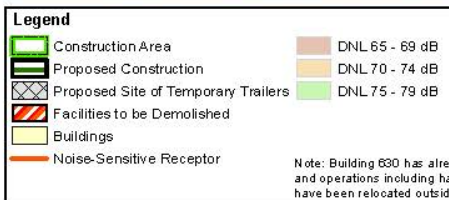
Land use designations for Columbus AFB are guided by the Land Use Plan, a component of the 2012 Columbus AFB General Plan. Columbus AFB utilizes 11 land use designations at the installation including the following: administration, aircraft operations, airfield, community commercial, community service, housing accompanied, industrial, medical, open space, outdoor recreation, and housing unaccompanied. The proposed project area is fully located within an area designated for aircraft operations (USAF, 2012b). Land use on Columbus AFB may be restricted in areas due to airfield operations and/or location within an AICUZ. The AICUZ designates safety zones around the airfield and restricts land use to reduce public safety hazards. Such land may include Accident Potential Zones (APZ), which are located adjacent to the end of runways and may experience an increase of potential aircraft accidents, or Airfield Clear Zones



**FINAL**



1



**Figure 3-1**  
**2012 AICUZ Study Noise Contours**  
**over the Proposed Action**  
**Columbus Air Force Base**  
**Columbus, MS**

(CZ), areas with an increased potential for aircraft accidents, adjacent to the end of runways, which are kept clear of obstructions to flight by the government. Areas designated as an APZ are further categorized into APZ I, which begins at the outer end of the CZ and is 5,000 feet long and 3,000 feet wide, and APZ II, which begins at the outer end of APZ I and is 7,000 feet long and 3,000 feet wide. Building 634 is located within an area designated as CZ. Building 640 and Building 642 are located within APZ I (USAF, 2012b). AICUZ designations in relation to the proposed project area are shown on Figure 2-1.

In addition to AICUZ, Installation Restoration Program (IRP) sites may pose constraints on land use. IRP sites are areas that are undergoing remediation from previous contamination. Construction on or within 100 ft of any IRP site may not occur without obtaining an IRP waiver from HQ AETC/A7C. Construction activities within these zones may require additional expenditure for containment or remediation of contamination. While the proposed project is not located within an IRP site; one IRP site (SS-30) is located adjacent east of the proposed project area. The Decision Document from 1995 indicated no further action for SS-30 was required, and the site was recommended for removal from further IRP consideration. Additionally, no land use restrictions were placed on this site (USAF, 1995). IRP sites are depicted in Figure 3-2 and discussed in further detail in Subsection 3.9.

### 3.5 NATURAL RESOURCES

#### 3.5.1 Definition of the Resource

An area's geological resources typically consist of surface and subsurface materials and their inherent properties. Principal factors influencing the ability of geological resources to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), topography, and soil stability.

Seismic properties indicate the potential for earthquake activity in an area. Those regions of the country that have surface or subsurface shifting, faulting, or crustal disturbance are more likely to be affected by earthquake activity. Seismic Hazard Zones are regulatory zones that encompass areas prone to liquefaction (failure of water-saturated soil) and earthquake-induced landslides. If located within a Seismic Hazard Zone, there is likely weak soil and/or rock present beneath a property. If present, these weak materials can fail during an earthquake and, unless proper precautions are taken during grading and construction, can cause damage to structures. The zones are mapped by the United States Geologic Survey (USGS) for probabilistic ground motion for Peak Ground Acceleration corresponding to the 2 percent in 50 year probability of exceedance (USGS, 2008). When there is an earthquake, the forces caused by the shaking can be measured as a percentage of gravity, or percent g, as shown on the published maps.

Topography is defined as the relative positions and elevations of the natural or anthropogenic features of an area that describe the configuration of its surface. An area's topography is influenced by many factors, including human activity, seismic activity of the underlying geological material, climatic conditions, erosion, and deposition. Information about an area's topography typically encompasses surface elevations, slope, and physiographic features (i.e., mountains, ravines, or depressions).



**FINAL**



**Legend**

- Proposed Construction
- Proposed Site of Temporary Trailers
- Facilities to be Demolished
- Buildings
- IRP Sites
- Hazardous Waste Satellite Accumulation Points

Note: Building 630 has already been demolished and operations including hazardous waste storage have been relocated outside the proposed project area.

N

0 100 200 Feet

Imagery: ESRI, Bing Mapping Service

**Figure 3-2**

**Hazardous Materials and Hazardous Waste Features**

**Columbus Air Force Base**  
**Columbus, MS**

The term “soil” generally refers to unconsolidated materials lying over bedrock or other parent material. Soils play a critical role in both the natural and human environment. Soil depth, structure, elasticity, strength, shrink-swell potential, and erodibility determine a soil’s ability to support man-made structures and facilities. Soils are typically described in terms of their series or association, slope, physical characteristics, and relative compatibility or constraints with respect to particular construction activities and types of land use.

### **3.5.2 Affected Environment**

#### **Geology**

Geology of the Columbus AFB area consists of shallow Cretaceous sediment overlain by Quaternary alluvial sediments. The upper member of the Eutaw Formation, the Tombigbee Sand, has fine to medium grained, glauconite, and calcareous sands, and is mapped in the project area. It was deposited in a quiet zone transitional to shelf muds unlike the lower Eutaw, which was deposited in shallow, high-energy near-shore waters (GSA, 1994).

#### **Seismicity**

Columbus AFB is located in earthquake hazard region with low gravitational acceleration potential (0.04 to 0.08 percent g). Any surface or subsurface shifting, faulting, or crustal disturbance will have low ground motion probabilistically.

#### **Topography**

Topography across the project area of Columbus AFB is generally flat, with a slight topographic gradient sloping southwest, with the highest land surface elevation approximately 207 feet above mean sea level (amsl) located on the north side of the project area and the lowest elevation approximately 204 feet amsl on the southwest boundary of the project area at Simler Boulevard. As discussed in Subsection 3.6.1, surface water runoff from most of the project area is diverted to a set of open collection ditches. These ditches channel runoff to a location further to the southwest of the project area in the southern and southwestern portion of Columbus AFB, where the surface runoff leaves the installation property. There are no major natural surface features (depressions or rises) or surface water bodies at Columbus AFB (USGS, 1987).

#### **Soil**

Two primary soil types are mapped within the Proposed Action area urban land and Prentiss-Urban land complex, as detailed in Table 3-5. Approximately 88 percent of the project area is urban land and comprised of mostly altered or reworked soils, or fill material with no identifiable profile. The remaining central and southwest portion (12 percent) of the project area is mapped as Prentiss-Urban land complex. This unit consists of about 45 percent Prentiss loam and about 35 percent Urban land. Prentiss soils consist of dark brown loam and are moderately well drained, and the erosion hazard is slight (USDA, 2013).



**Table 3-5  
Soil Occurrence in Facility Demolition/Construction Areas**

		Soil Unit (acres)	
		Prentiss-Urban land complex	Urban land
Demolition	Building 634	---	0.10
	Building 642	---	0.07
	Building 640	---	0.44
	Lockhart Street	0.16	0.11
Construction	AMOC Building	---	0.63
	Construction Swing Space	---	0.42
Undeveloped Areas		0.56	3.33
<b>Total in Project Area</b>		<b>0.72</b>	<b>5.09</b>

### 3.6 WATER RESOURCES

#### 3.6.1 Definition of the Resource

Water resources include both surface and groundwater. In Mississippi, the state owns all natural surface water and it is held in trust; this includes storm water and floodwaters found within natural lakes, rivers and streams per the Mississippi Code, Title 51.

Groundwater includes the subsurface hydrologic resources of the physical environment and is generally a safe and reliable source of fresh water for the general population. This is especially true for those in where groundwater is commonly used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater plays an important role in the overall hydrologic cycle. Its properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

The quality of water resources is governed by federal statutes, including the Clean Water Act (CWA) 33 USC); the Safe Drinking Water Act 42 USC; and by the state statute of the Mississippi Administrative Code. Mississippi surface water quality standards are in Title 11, Part 7, Chapter 1 of the Mississippi Administrative Code. MDEQ is given the primary responsibility for implementing water quality management and enforcement.

With regard to floodplains, EO 119988, Floodplain Management, requires that federal agencies:

*avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. (FEMA, 2013)*

According to the Federal Emergency Management Agency (FEMA) flood insurance rate maps (FIRMs) the project area is outside of the 100-year and 500-year floodplains (FEMA, 2011a-d).

### 3.6.2 Affected Environment

#### 3.6.2.1 Surface Water

Columbus AFB is located within the Tombigbee River Basin. The Tombigbee River Basin includes an area of approximately 6,100 square miles in northeastern Mississippi and approximately 7,600 square miles in northwestern Alabama. It is bordered by the Alabama River Basin to the east and by the Lower Mississippi River Region to the west. The Tennessee-Tombigbee Waterway (TTW), made of dams, man-made canals, and natural drainage of the original Tombigbee River, can be found approximately one mile west of Columbus AFB and is the most significant hydrologic feature in the Tombigbee River Basin. It meets with the Alabama River to form the Mobile River, which discharges into the Gulf of Mexico (MDEQ, 2013a).

The Buttahatchee River flows near the northern border of Columbus AFB before joining the TTW. It mostly drains the airfields on the north and northeast sides of Columbus AFB. Other surface water at Columbus AFB, including the project area, drains primarily south and southwest to Stinson Creek and ultimately the TTW.

In 1996, Stinson Creek was found on the USEPA's 303(d) list of impaired waters due to pesticides, nutrient and organic oxygen enrichment, low dissolved oxygen, and sediment. In 2005, a total maximum daily load (TMDL) for pesticides in the Big Black River Basin and the Tombigbee River Basin was approved. This study found that the legacy pesticides, dichlorodiphenyltrichloroethane (DDT) and toxaphene, are now prohibited from use and results of fish tissue samples demonstrate the waterbody is naturally recovering. In 2006, a TMDL for nutrient and organic oxygen enrichment and low dissolved oxygen in Stinson Creek was approved. This study concluded that a reduction in nitrogen loads (of approximately 50%) was needed to meet the target range and restore healthy nutrient, organic oxygen, and dissolved oxygen levels in the waterbody. In 2007, a TMDL for sediment in Stinson Creek was approved, with findings that a reduction in sediment loads was needed to meet the target range and restore healthy sediment levels in the waterbody. Stinson Creek was not found on the 2012 303(d) List (MDEQ, 2005, 2006, 2007, and 2013b).

According to the Mississippi Department of Environmental Quality (MDEQ) 2012 Section 303(d) List of Impaired Water Bodies and the 2012 Section 205(b) Water Quality Assessment Report, the Buttahatchee River is impaired for fish and wildlife use due to insufficient pH levels and is in need of a TMDL (MDEQ, 2013b).

Additionally on Columbus AFB a former 2-acre borrow pit was converted into SAC Lake. SAC Lake is located approximately 2.5 miles northwest of the project area on Columbus AFB. Water levels within the lake are maintained and influenced by groundwater infiltrations and seasonal floods (winter/spring rains) and droughts (summer).

### 3.6.2.1 Groundwater

There are three primary aquifers located in the Columbus AFB area, including, in descending stratigraphic order: surficial alluvial terrace deposits associated with the Tombigbee River (Pliocene-Pleistocene age), the Eutaw-McShan Aquifer (Cretaceous age), and the Tuscaloosa Aquifer System (Cretaceous age). Deeper Paleozoic aquifers are also present in the region, however, their characteristics are unknown (TVA, 2005).

The Alluvial terrace deposits are generally flat, with a thickness of 20 to 30 feet and comprised predominantly unconsolidated sand and gravel, with minor deposits of silt and clay. Groundwater from this layer discharges into the underlying Eutaw-McShan aquifer, though seasonal fluctuations occur in the water table. Regional groundwater movement within the terrace aquifer is generally westward toward the Tombigbee River (TVA, 2005).

In the project areas, the Eutaw-McShan aquifer is located directly beneath the terrace aquifer, with a thickness of approximately 300 feet and is comprised mostly of interbedded glauconitic sands, silts, and clays with a total thickness of approximately 300 feet. In the project area, this aquifer is widely used for municipal, industrial, and domestic water supplies (TVA, 2005).

The Tuscaloosa Aquifer System is comprised of four hydraulically connected regional aquifers; the Gordo, Coker, Massive Sand, and undifferentiated Lower Cretaceous sediments. These aquifers generally consist of interbedded sands, gravels, silts, and clays having an estimated composite thickness of about 500 feet in the site area. The Tuscaloosa Aquifer System is the primary source of large municipal and industrial well supplies within the region (TVA, 2005).

The Eutaw Aquifer is the source of water for the City of Columbus Water System, which supplies water to Columbus AFB from eight wells (CLW, 2013). Reported in 2000, it is also the source of water for several active community-use water supply wells located outside of Columbus AFB, but within approximately one mile of the project area (TVA, 2001).

## 3.7 BIOLOGICAL RESOURCES

### 3.7.1 Definition of the Resource

Biological resources include plant and animal species and the habitats in which they occur. For this analysis, biological resources are divided into the following categories: vegetation, wildlife, threatened and endangered species, migratory birds, and wetlands. Vegetation and wildlife refer to the plant and animal species, both native and introduced, which characterize the region. The Fish and Wildlife Coordination Act (16 U.S.C. 661-667e) requires consultation with the United States Fish and Wildlife Service (USFWS) and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted ... or otherwise controlled or modified" by any agency under a Federal permit or license. The purpose of the act is to recognize the vital contribution of wildlife resources to the nation and to require equal consideration and coordination of wildlife conservation with water resources development programs.

Threatened and endangered species are plant and animal species in need of protection to ensure that the species do not decline to extinction. Under the Endangered Species Act (ESA; 16 U.S.C. 1536), the USFWS maintains an active conservation program for threatened and endangered species and the habitats in which they are found. An “endangered species” is defined as any species in danger of extinction throughout all or a large portion of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS advises government agencies, industry, and the public that these species are at risk and might warrant future protection under the ESA. The USFWS also maintains a species of conservation concern list. This list includes unprotected species that are likely to become candidate species in the future under the ESA. The law requires federal agencies, in consultation with the USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species.

The Bald and Golden Eagle Protection Act (16 USC 668a; 50 CFR 22) was enacted to protect America’s national symbol, the Bald Eagle (*Haliaeetus leucocephalus*). The Golden Eagle is a similar-appearing eagle, especially in immature life stages, and therefore was added to ensure protection of the Bald Eagle. This law, originally passed in 1940 and as amended, provides for the protection of the Bald Eagle and the Golden Eagle (*Aquila chrysaetos*) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. The USFWS defines disturbance to eagles as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information (1) injury to the eagle, (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment” (50 CFR Part 22.3).

Migratory birds are protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §703) as well as EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds). Illegal actions against migratory bird species are defined by the Migratory Bird Treaty Act as any “attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof” (USFWS, 2013a).

Wetlands are special habitats that support specific plants and wildlife. Wetlands provide diverse habitats for numerous species, protection from flooding and erosion, and are also important in the recycling of nutrients. The US Army Corps of Engineers (USACE) regulates “Waters of the United States,” wetlands, and special aquatic sites under Section 404 of the Clean Water Act (CWA). The USACE and USEPA define wetlands (in 40 CFR 230.3[t]) as *those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.* This definition takes into consideration three distinct environmental parameters: hydrology, soil, and vegetation. Positive wetland indicators of all three parameters are normally present in wetlands. EO 11990, Protection of Wetlands, signed by President Carter

in 1977, requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. It also requires that agencies avoid construction or providing assistance for new construction located in wetlands, to the extent practicable.

### 3.7.2 Affected Environment

#### 3.7.2.1 Vegetation

Columbus AFB is located within the Flatwoods/Alluvial Prairie Margins ecological region of Mississippi (USAF, 2005). The Flatwoods/Alluvial Prairie Margins region is the transitional area between the Blackland Prairie and the more forested plains and hills. Specifically, Columbus AFB lies within the Southern Mixed Forest Province that is typically characterized by forests of broadleaf deciduous and needleleaf evergreen trees comprised of loblolly pine (*Pinus taeda*), shortleaf pine (*P. echinata*) and other southern yellow pine species. Common associate species also include oak (*Quercus*), hickory (*Carya*), sweetgum (*Liquidambar styraciflua*), blackgum (*Nyssa sylvatica*) red maple (*Acer rubrum*), and winged elm (*Ulmus alata*). Dogwood (*Cornus florida*), hawthorne (*Crataegus* spp), blueberry (*Vaccinium* spp), American beautyberry (*Callicarpa americana*), yaupon (*Ilex* spp) and woody vines are common understory species. Dominate grasses within Southern Mixed Forest Province are bluestem (*Andropogon* spp) and panicum subspecies (USAF, 2005).

Approximately 1,418 acres of Columbus AFB are classified as Unimproved, and include grounds where little or no maintenance is performed and which are comprised of native grasses and oak trees. However, the project area is located primarily within improved areas, where in the turf or otherwise landscaped areas vegetation is comprised primarily of maintained lawns of centipede grass (*Eremochloa ophiuroides*), Bermuda grass (*Cynodon dactylon*), and annual ryegrass (*Lolium multiflorum*). Landscape trees and shrubs consist of loblolly pine, water oak (*Quercus nigra*), crepe myrtle (*Lagerstroemia indica*), willow oak (*Q. phellos*), and sweetgum. Other species of oak present are the southern red oak (*Q. falcata*), live oak (*Q. virginiana*), pin oak (*Q. palustris*), and southern magnolia (*Magnolia grandiflora*). Small tree and shrub species include the eastern red cedar, eastern redbud (*Cercis canadensis*), and the dogwood (USAF, 2005).

Columbus AFB actively manages pine and hardwood species for commercial forestry; however trees within the project area are not included in the forestry management. As part of the Tree City USA program by the Arbor Day Foundation, an urban tree inventory was conducted in 2004. As stipulated in AFI-32-7064, Columbus AFB achieved Tree City USA designation and continues to maintain this status (USAF, 2005).

The Federal Noxious Weed Act (7 U.S.C. 2801 et seq.), enacted in January 1975, established a federal program to control the spread of noxious weeds. It gave the Secretary of Agriculture authority to designate plants as noxious weeds by regulation; to inspect, seize, and destroy product; and to quarantine areas, if necessary, to prevent the spread of such weeds. EO 13112 was issued in 1999 to enhance federal coordination and response to the complex and accelerating problem of invasive species. The EO defines an invasive species as a species not native to the

region or area whose introduction (by humans) causes or is likely to cause harm to the economy or the environment, or harms animal or human health (NISC, 2005).

While no designated invasive or exotic species occur within the project area, kudzu (*Pueria montana*) and privet (*Ligustrum sinense*) are common exotic species that are present on Columbus AFB (USAF, 2005).

### 3.7.2.2 Wildlife

#### Mammals

As reported in the 2005 *Integrated Natural Resource Management Plan* (INRMP), surveys have been conducted on Columbus AFB to document wildlife presence on the base. Common mammal species that have been found on Columbus AFB include the eastern mole (*Scalopus aquaticus*), swamp rabbit (*Sylvilagus aquaticus*), woodchuck (*Marmot monax*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis lutrans*), eastern woodrat (*Neotoma floridana*), cotton mouse (*Peromyscus gossypinus*), field mouse (*Peromyscus polionotus*), and the striped skunk (*Mephitis mephitis*). Additionally, game animals include whitetail deer (*Odocoileus virginianus*), cottontail rabbits (*Sylvilagus floridanus*), fox squirrels (*Sciurus nigra*) and gray squirrels (*Sciurus carolinensis*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), opossum (*Didelphis virginiana*), beaver (*Castor canadensis*), and bobcat (*Lynx rufus*). Most of these animals prefer forested and open undeveloped areas on base (USAF, 2005), and are therefore not likely to be found within the project area.

#### Birds

Columbus AFB is located within the Mississippi Migratory Flyway of North America. The flyway generally follows the Mississippi River. Migratory species typically use this flyway to travel from wintering grounds in the south to summering grounds in the north; though, migratory patterns vary by species. Bird species present in Columbus AFB can vary greatly depending on the time of year and which species are migrating through the vicinity. Common birds that have been documented on Columbus AFB include Wild Turkey (*Meleagris gallopavo*), Northern Bobwhite (*Colinus virginianus*), Rock Dove (*Columba livia*), Mourning Dove (*Zenaida macroura*), Loggerhead Shrike (*Lanius ludovicianus*), Wood Duck (*Aix sponsa*), Yellow-billed cuckoo (*Coccyzus americanus*), Northern flicker (*Colaptes auratus*), Red-bellied woodpecker (*Enturus carolinus*), Red-headed woodpecker (*Melanerpes erythrocephalus*), Downy woodpecker (*Picoides pubescens*), Eastern kingbird (*Tyrannus tyrannus*), Blue jay (*Cyanocitta cristata*), Carolina wren (*Thryothorus ludovicianus*), Mockingbird (*Mimus polyglottos*), Cardinal (*Cardinalis cardinalis*), White-eyed vireo (*Vireo griseus*) and various sparrows (USAF, 2005). A full list of identified avian species is detailed in the 2005 Columbus AFB INRMP.

#### Reptiles and Amphibians

As reported in the 2005 INRMP, common herpetofauna species observed on Columbus AFB include the Cottonmouth moccasin (*Agkistrodon piscivorous*), Copperhead (*A. contortrix*



*lacticintus*), Rough green snake (*Ophedrys aestivus*), Rat snake (*Elaphe obsoleta*), Coachwhip (*Masticophis flagellum*), and Speckled kingsnake (*Lampropeltis getula holbrooki*). Additional species include Glass lizards (*Ophisaurus attenuatus*), Common box turtle (*Chelydra serpentina*), Slimy salamander (*Plethodon glutinosus*), American toad (*Bufo americanus*), and Bull frog (*Rana catesbeiana*) (USAF, 2005). These species are typically found on base in undeveloped forested areas and along vegetated drainage ways, and are therefore not likely to be found within the project area.. A full list of identified herpetofauna species is detailed in the 2005 Columbus AFB INRMP.

### **Fish**

According to the 2005 INRMP, the SAC Lake on Columbus AFB was stocked with white catfish (*Ictalurus catus*) and black bullhead (*Ictalurus melas*) in 1979. Again in 1992, the lake was stocked with hybrid bream (a cross between a male Bluegill [*Lepomis macrochirus*] and a female Green sunfish [*L. cyanellus*]) for leisure fishing. The United States Department of Agriculture (USDA) also conducted an electro-shocking fish survey 28 March 2004 and found the following species: Largemouth bass (*Micropterus salmoides*), Bluegill bream (*Lepomis macrochirus*), and White crappie (*Pomoxis annularis*). In addition to these game species Common carp (*Cyprinus carpio*), Hog suckers (*Hypentelium nigricans*), and Gar were also found (USAF, 2005).

#### **3.7.2.3 Threatened and Endangered Species**

Table 3-6, on the following page includes the species listed by the USFWS as federal-listed Threatened and Endangered Species for Lowndes County and their potential presence on Columbus AFB (USFWS, 2013a). No critical habitat for these listed species is designated on Columbus AFB (USFWS, 2013b). Additionally, current USFWS records indicate that there are no federally protected species or their habitats within the project vicinity (USFWS, 2013c).

**FINAL**

**Table 3-6  
Federally-Listed Threatened and Endangered Species  
Listed for Lowndes County**

Common Name	Scientific Name	Federal Status	Habitat Presence In the Project Area	Species Presence
<b>MOLLUSKS</b>				
Alabama moccasinshell	<i>Medionidus acutissimus</i>	TCH	<b>No</b> – May be found in the Noxubee River, with clean, swiftly moving stable stream with pools and riffles. Critical Habitat is not designated on Columbus AFB.	Not Likely
Black clubshell	<i>Pleurobema curtum</i>	E	<b>No</b> - clean, swiftly moving stable stream with pools and riffles.	Not Likely
Heavy pigtoe mussel	<i>Pleurobema taitianum</i>	E	<b>No</b> - clean, swiftly moving stable stream with pools and riffles.	Not Likely
Inflated heelsplitter	<i>Potamilus inflatus</i>	T	<b>No</b> - found in the lower Pearl River, Noxubee, and Tombigbee watersheds, with moderate to swift currents. Prefers riffle or shoal areas with stable bottoms of sandy gravel or firm mud gravel and cobble.	Not Likely
Orange-nacre mucket	<i>Lampsilis perovalis</i>	TCH	<b>No</b> - May be found in the Noxubee River, with clean, swiftly moving stable stream with pools and riffles. Critical Habitat is not designated on Columbus AFB.	Not Likely
Ovate clubshell	<i>Pleurobema perovatum</i>	ECH	<b>No</b> - clean, swiftly moving stable stream with pools and riffles. Critical Habitat is not designated on Columbus AFB.	Not Likely
Southern clubshell	<i>Pleurobema decisum</i>	ECH	<b>No</b> - May be found in the Noxubee River, with clean, swiftly moving stable stream with pools and riffles. Critical Habitat is not designated on Columbus AFB.	Not Likely
Southern combshell	<i>Pleurobema penita</i>	E	<b>No</b> - clean, swiftly moving stable stream with pools and riffles.	Not Likely
<b>PLANTS</b>				
Price's potato bean	<i>Apios priceana</i>	T	<b>No</b> - herbaceous, twining vine that is typically found on slopes or bluffs with open woods that often grade into creek and river bottoms. May also be found along forested margins of maintained rights-of-ways.	Not Likely

Source: USFWS, 2013a and USFWS, 2013d  
E = Endangered  
T = Threatened  
ECH/TCH = Listed with Critical Habitat

### 3.7.2.4 Migratory Birds

Columbus AFB currently maintains a Migratory Bird Depredation Permit from the USFWS as part of the Bird/Wildlife Aircraft Strike Hazard (BASH) Plan. The following migratory bird species are some of the species monitored as part of BASH prevention: Mallards (*Anas platyrhynchos*), Wood Duck (*Aix sponsa*), Northern Pintail (*Anas acuta*), American Wigeon (*Anas americana*), Barn Swallow (*Hirundo rustica*), Great Blue Heron (*Ardea herodias*), Little Blue Heron (*Egretta caerulea*), Cattle Egret (*Bubulcus ibis*), Geese (*Anserini* tribe), Eastern Meadowlark (*Sturnella magna*), Horned Larks (*Eremophila alpestris*), Common Grackle (*Quiscalus quiscula*), American Crow (*Corvus brachyrhynchos*), Turkey Vulture (*Cathartes aura*), Black Vulture (*Coragyps atratus*), Cooper's Hawk (*Accipiter cooperii*), Red-tailed Hawk (*Buteo jamaicensis*), Mourning Dove (*Zenaida macroura*), Eurasian Collared Doves (*Streptopelia decaocto*) and miscellaneous songbirds. Under the permit, Columbus AFB utilizes scare cannons to drive away these species within zones such as the airfield that are documented hazards (USAF, 2005).

### 3.7.2.5 Wetlands

As reported in the 2005 INRMP, a study conducted in 2002 identified 26 individual wetlands; totaling 181.24 acres in size were delineated on Columbus AFB. However, none of these wetlands are located within the vicinity of the project or within the project area (USAF, 2005).

## 3.8 CULTURAL RESOURCES

### 3.8.1 Definition of Resource

Cultural resources include structures, buildings, archaeological sites, districts, cemeteries, and objects that may be classified as archaeological or non-archaeological. Archaeological resources are defined as any material remains of past human life or activities which are of archaeological interest. Non-archaeological resources include recognizable buildings, structures, and objects and often are associated with substantial archival information or oral history data.

Federal laws require consideration of cultural resources during project planning. Compliance with the National Historic Preservation Act (NHPA) requires consultation with the State Historic Preservation Officer (SHPO) and/or federally recognized tribes to determine the project's effects on cultural resources. If a cultural resource is determined by the SHPO to be eligible for listing in the National Register of Historic Places (NRHP), it is then considered to be a Historic Property.

The Area of Potential Effects (APE) for cultural resources is defined by 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist."

### 3.8.2 Affected Environment

An inventory and assessment of the Cold War-era (1945-1951) built environment at Columbus AFB was completed in December 2003 to assist the AETC in fulfilling its responsibilities under the NHPA and NRHP.

Of the 655 inventoried Cold War buildings or structures at Columbus AFB, only 22 were further evaluated based on their association with the Cold War missions of Columbus AFB. Of the 22 buildings or structures evaluated, 3 were recommended as eligible for listing in the NRHP. Further discussion with the SHPO reduced the number of buildings recommended as eligible to two. Both buildings have since been demolished (USAF 2012a). Neither of the buildings was located within the APE for the proposed construction of the AMOC, which consists of the total demolition and construction footprint.

Of the three buildings proposed for demolition under the Proposed Action, the Mississippi Department of Archives and History (MDAH) concurred that Building 640 was not eligible for listing in the NRHP. Even though Buildings 634 and 642 are over 50 years old, they have both had interior and exterior renovations and upgrades and, therefore, are not considered eligible for listing in the NRHP as historical structures (MDAH, 2012).

## 3.9 HAZARDOUS MATERIALS AND SUBSTANCES

### 3.9.1 Definition of the Resource

In this hazardous materials and substances section, analysis will focus on hazardous materials and waste, installation restoration program (IRP) sites, asbestos-containing materials (ACM), and lead-based paint (LBP). Hazardous waste and materials include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed. Installation Restoration Program (IRP) sites are areas with documented soil and groundwater contamination that presents a potential risk to human health and the environment.

The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1910 for general industry and 29 CFR 1926 for construction requires owners to know the condition of asbestos in their buildings and if tenants and employees are being exposed to asbestos. Prior to renovation and/or deconstruction, USEPA regulations under National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 61, Part M, require an owner to know the extent of asbestos in the building prior to the start of work.

The Residential Lead-Based Paint Hazard Reduction Act of 1992 regulates the use and disposal of LBP at federal facilities. Federal agencies are required to obey all applicable federal, state, interstate, and local laws relating to LBP activities and hazards. The Air Force policy and guidance on LBP in facilities establishes the management of LBP at Air Force installations by

requiring each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards.

### 3.9.2 Affected Environment

#### 3.9.2.1 Hazardous Materials and Waste

Hazardous materials used at Columbus AFB include general aircraft maintenance products including fuels, oils, solvents, and hydraulic fluid. All hazardous materials used on Columbus AFB are managed in accordance with *AFI 32-7086, Hazardous Materials Management*. Fuel is stored in 16 underground storage tanks (USTs) located throughout the installation. The USTs are registered and regulated by the Mississippi Department of Environmental Quality (MDEQ) (USAF, 2012a). No USTs are located within the proposed project area.

Columbus AFB is classified as a large quantity generator (LQG) of Resource Conservation and Recovery Act (RCRA)-regulated hazardous waste, but does not have a Transfer, Storage or Disposal (TSD) Facility or RCRA Part B permit. The majority of hazardous waste generated on the installation is associated with aircraft maintenance operations. Two 90-day hazardous waste storage sites and 22 satellite accumulation sites are present on the installation (USAF, 2012a). No 90-day hazardous waste storage sites or satellite accumulation sites are present in or around the project area. Based on review of the 2013 Columbus AFB Hazardous Waste Management Plan (HWMP), no hazardous waste stream is reported in the installation inventory for the three buildings (634, 640, and 642) included in the proposed project area (USAF, 2013b). The nearest waste accumulation sites are satellite accumulation sites located in Building 636, Aerospace Physiology (approximately 50 feet northwest of Building 640) and Building 449, T-6 Maintenance (approximately 150 feet southeast of Building 640). Waste streams reported for Building 636 include approximately 50 pounds of alcohol pads per year. Waste streams for Building 449 include approximately 600 pounds waste alcohol and 800 pounds engine wash per year (USAF, 2013b). The former Building 630 (demolished in 2013) was a satellite accumulation site; however, prior to demolition of the structure, operations including hazardous waste storage were relocated outside the proposed project area. Building 246, approximately 800 feet southeast of Building 642 was also identified as a hazardous waste accumulation point. Waste streams reported for Building 246 include approximately 200 pounds of aircraft sealant with methyl ethyl ketone (MEK) per year (USAF, 2013b). Hazardous waste storage sites in the vicinity of the proposed project area are shown on Figure 3-2 in Subsection 3.4.2.

All regulated generators of Hazardous Waste are required to develop waste minimization programs under the Hazardous and Solid Waste Amendments (HSWA) Act of 1984. Hazardous waste generated at Columbus AFB is managed in accordance with the Columbus AFB HWMP. Waste minimization at Columbus AFB is focused on source reduction, reuse, and recycling with a goal of reducing generation to as near zero as possible (USAF, 2012a).

### 3.9.2.2 Installation Restoration Program Sites

The IRP at Columbus AFB includes 34 traditional IRP sites and 3 Military Munitions Response Program (MMRP) sites that are also addressed by the IRP. The MMRP sites are currently undergoing investigation and/or remediation activities. The proposed project area is not located within an IRP or MMRP site (USAF, 2012a). The locations of IRP sites in the vicinity of the proposed project area are shown on Figure 3-2 in Subsection 3.4.2.

The closest IRP site to the proposed project area is the closed IRP site SS-30 adjacent east of Building 640. The site is associated with previous storage of motorized hydraulic equipment (referred to as mules) on unpaved parking ramps from the 1960s to 1992. Potential leaks of hydraulic fluid and other oils resulted in visible staining at Site SS-30. According to the 1995 Decision Document for Site SS-30, no constituents were reported above regulatory significant levels in soil or groundwater sampled at SS-30. The Decision Document from 1995 indicated no further action for SS-30 was required, and the site was recommended for removal from further IRP consideration (USAF, 1995).

The proposed project area is located approximately 200 feet southwest of the closed IRP site SS-29. SS-29 is associated with Pumphouse #1 and Pumphouse #2. The MDEQ issued a no further action (NFA) letter for Pumphouse #1 on 07 April 2005 and an NFA letter for Pumphouse #2 on 18 October 2005.

Land use controls associated with IRP sites include restrictions regarding the installation of potable groundwater wells. Construction projects cannot occur within 100 feet of any IRP site without first obtaining an IRP waiver from HQ AETC/A7C. Construction activities conducted under an IRP waiver must be monitored for compliance by the installation (USAF, 2012a). While the proposed project is not located within an IRP site; one IRP site (SS-30) is located east of and adjacent to the proposed project area.

### 3.9.2.3 Asbestos-Containing Materials

The buildings proposed for demolition were constructed in 1958 (Building 640) and 1959 (Buildings 634 and 642). Asbestos surveys were conducted for these buildings (CAFB, 2013) and the findings reported are as follows:

- **Building 634:** ACM was detected in samples collected by Galson Corporation in 1993 from bathroom piping, fittings, and vinyl raise tile. However, additional multiple samples collected by Tetra Tech, Inc. in 2012 indicated none of the sampled materials contained asbestos.
- **Building 640:** ACM was detected in samples collected in 1993 by Galson Corporation, in 2010 by Unified Testing Services, and in 2012 by Tetra Tech, Inc. from the following areas:
  - Wall mud compound in the telephone room
  - Ceiling mastic in the hallway or stairs
  - Mechanical room piping and fittings
  - Office vinyl raise tile, sheetrock

- Bathroom sheetrock, vinyl raise tile
- **Building 642:** ACM was detected in samples collected in 1993 by Galson Corporation and in 2012 by Tetra Tech, Inc. from the following areas:
  - Insulation throughout the thermal system
  - Vinyl raise tile in the foyer or lobby and janitorial room
  - Office piping, fittings, and vinyl raise tile

### 3.9.2.4 Lead-based Paint

Buildings constructed prior to 1978 may contain LBP. Based on the age of the buildings scheduled for demolition, LBP may be present in the buildings. No documentation of LBP surveys conducted for the three buildings proposed for demolition was provided for review as part of this analysis.

## 3.10 UTILITIES AND INFRASTRUCTURE

### 3.10.1 Definition of the Resource

Utilities and infrastructure resources refer to structures and systems that contribute to the functionality of inhabited areas. Utilities and infrastructure components at Columbus AFB include stormwater, potable water, wastewater, electricity and natural gas, telecommunications, transportation, and solid waste.

### 3.10.2 Affected Environment

#### 3.10.2.1 Stormwater

Stormwater at Columbus AFB is conveyed to the Buttahatchee and Tombigbee rivers and Stinson Creek with a storm sewer system, open channels, and sheet flow. It is reported that the stormwater system is generally in fair condition (USAF, 2012c). In the project area stormwater mains are located along Imes Street and C Place and under Building 637 (USAF, 2010a). As further discussed in Subsection 3.6.2.1 (Surface Water) of this report, the Buttahatchee River, one of the Columbus AFB runoff receiving waters, is impaired according to the most current USEPA-approved MDEQ 303(d) List. To maintain and improve the status of water quality of receiving waters the National Pollutant Discharge Elimination System (NPDES) program, authorized by the CWA and regulated by the USEPA, controls pollutant discharges into waters of the U.S. In Mississippi, the MDEQ has federal regulatory authority to administer the NPDES program.

Columbus AFB has been issued authorization by MDEQ to manage and discharge industrial stormwater under an NPDES general permit known as the Baseline Storm Water General Permit (MSR001351). A Stormwater Pollution Prevention Plan (SWPPP) is maintained and implemented to comply with the NPDES program and MSR001351 and includes, as required:

- Identification of potential stormwater pollution sources.
- Establishment of practices and necessary control measures that will prevent or reduce pollution in stormwater.
- Documentation of stormwater monitoring and inspections performed at the site (MDEQ, 2010 and USAF 2012c).

None of the buildings associated with the proposed project require compliance with MSR0001351 or are included in the SWPPP.

In addition to this NPDES permit and plan, any construction projects that will disturb one or more acres require MDEQ authorization to manage and discharge stormwater under either the Small or Large Construction General Permit (MSR10 or MSR15, respectively). A construction specific SWPPP must be maintained and implemented to comply with the NPDES program and MSR10 or MSR15, and must include the BMPs required to minimize risk of erosion, sedimentation, and pollutant release during construction activities (MDEQ 2011 and 2013c).

### **3.10.2.2 Potable Water**

The City of Columbus Water System supplies Columbus AFB drinking water from the Eutaw Aquifer. This system includes eight deep water wells and two water treatment plants with the capacity to produce approximately 14 million gallons per day (MGD) for distribution to over 10,000 customers (CLW, 2013).

At Columbus AFB, there are two elevated water storage tanks with capacities of 400,000 and 200,000 gallons and a clear well with a capacity of 50,000 gallons. In addition, Building 440 has two water storage tanks with capacities of 90,000 gallons each. Water distribution mains at Columbus AFB are over 60 years old and in need of replacement. In the project area, water distribution mains are located along Lockhart Street, C Place, and Imes Street and under Building 637 (USAF, 2010a and 2012a).

### **3.10.2.3 Wastewater**

Wastewater service at Columbus AFB is provided by the City of Columbus collection system and Reynolds R. Ridgley Wastewater Treatment Plant. The treatment plant has a capacity of 10 MGD and has additional temporary storage facilities (CLW, 2013).

At Columbus AFB, there are approximately 180,054 linear feet of wastewater mains, mostly 8 inches in diameter, and three main lift stations. It is reported that the wastewater mains currently experience infiltration. In the project area, there are wastewater mains located under the parking lot located southwest of Buildings 636 and 640, along Lockhart Street, and between Buildings 636 and 640 (USAF, 2010a and 2012a).



### 3.10.2.4 Electricity and Natural Gas

Electricity service at Columbus AFB is provided by the Tennessee Valley Authority through the primary 161-KV circuit from the West Columbus distribution substation. The average annual electrical energy consumption is 2,500,000 kWh. The average peak demand of 7,000 kW is only 31% of the overall substation capacity, with the highest peak of the year generally during July or August around 1500 to 1600 hours. Two alternate circuits are available from the West Point and Lowndes distribution substations. In the project area, electrical lines are located along Lockhart Street, Imes Street, and C Place, and between C Place and Imes Street to the northeast of Buildings 636 and 640 (USAF, 2010a and 2012a).

Natural gas is used at Columbus AFB for heat and humidity control. In the project area, natural gas lines are located along Lockhart Street, Imes Street, and C Place, and between Buildings 634 and 636 (USAF, 2012a).

### 3.10.2.5 Telecommunications

At Columbus AFB, telecommunication service is provided through underground fiber optic and copper cable by AT&T. Communication systems include the Defense Integrated Services Network (DISN), the Non-Classified Internet Protocol Router Network (NIPRNET), the Secure Internet Protocol Router Network (SIPRNET), the Defense Switched Network (DSN), and the Federal Telephone System NETWORKX (FTS-NETWORX). In the project area, telecommunication lines are located along Lockhart Street, Imes Street, and C Place, and between C Place and Imes Street to the northeast of Buildings 634 and 642 (USAF, 2010a and 2012a).

### 3.10.2.6 Transportation

There are two access gates on the south side of Columbus AFB. The East (Main) Gate is located on East Gate Road off of U.S. Highway 45 to the northwest and the South Gate is located on Highway 373 at Imes Street. Once on base, East Gate Road turns into Simler Boulevard. Simler Boulevard intersects Imes Road, and the project area is located to the northwest of this intersection on Imes Road.

No traffic studies have been conducted at Columbus AFB. It has been reported that all roads are in good condition with minimal cracking of the wear course layer and there is ample personally-owned vehicle (POV) parking on the interior streets within the flightline secure area along C Place and Imes Street. Pedestrian traffic between Columbus AFB facilities takes place in driveways, parking lots or dedicated sidewalks limited to one side of each road (USAF, 2010a).

### **3.10.2.7 Solid Waste**

Solid waste from Columbus AFB is sent to the Columbus Class I Rubbish Landfill and the Golden Triangle Regional Landfill. In 2013, Columbus AFB generated approximately 117.78 tons of solid waste that was disposed of between these two landfills.

The Columbus Class I Rubbish Landfill was recently reauthorized under MDEQ permit number R1-013 for an additional 52 acres. The Columbus Class I Rubbish Landfill property is located on Armstrong Road approximately three miles south of Columbus, MS. The landfill is classified as a Class I Rubbish site which allows for the disposal of building/structural debris, vegetative and inert debris. The minimum expected life of the landfill is 15 years and is projected that the Columbus Class I Rubbish Landfill would accept approximately 182,000 tons of waste per year (City of Columbus, 2013).

The Golden Triangle Regional Landfill was re-authorized under MDEQ permit number SW0130010432 in 2011. The Golden Triangle Regional Landfill property is located 9778 Old West Point Road in Starkville, MS on approximately 500 acres of land. The landfill is classified as a Type I Municipal Solid Waste Management Facility that allows for the disposal of Municipal Solid Waste, including household garbage, commercial wastes, and any non-hazardous solid waste. The total permitted volume is 31 million cubic yards with an expected lifespan of over 100 years for the landfill. Golden Triangle Regional Landfill typically accepts 125,000-140,000 tons each year and as of December 2013 has approximately 14-18 million tons of availability remaining (Golden Triangle Regional Landfill, 2013).

## **3.11 SOCIOECONOMICS**

### **3.11.1 Definition of the Resource**

The socioeconomic status of Columbus AFB and the area surrounding the project are addressed in this section. Due to the nature of the Proposed Action and the fact that it would not include changes to population, housing, or education, the scope of this section is limited to an analysis of the existing economic conditions at Columbus AFB and its area of influence and the temporary relocation of personnel working in Buildings 634, 640, and 642. Construction workers associated with the Proposed Action would only be on Columbus AFB during working hours and would not constitute a change to the Base population.

### **3.11.2 Affected Environment**

The area of influence is the geographic area subject to significant base-generated economic impacts and is generally defined as the area within a 50-mile radius of the Base. For Columbus AFB this area encompasses five counties in Mississippi (Lowndes, Clay, Oktibbeha, Monroe, and Noxubee) and two counties in Alabama (Lamar and Pickens) (USAF, 2012d). The City of Columbus, located 10 miles south of Columbus AFB with a population of 23,688 (USCB, 2010a), is a major beneficiary of the following economic benefits.

**Columbus AFB Economic Activity and Contribution**

Columbus AFB directly employs approximately 3,622 personnel (including military, Non-Appropriated Funds, Commissary, Civil service, Credit Union, AAFES, and Contract Personnel) for a total of \$143.8 million in payroll expenditures, which represents a growth of \$3.6 million from 2011 (USAF 2012d). In addition, 1,228 indirect jobs totaling \$49.5 million were created in Fiscal Year (FY) 2012 to support Columbus AFB and its personnel with adequate goods and services. This is an increase of 251 jobs from FY 2011 (USAF 2012d).

The annual expenditures for Columbus AFB in FY 2012 totaled \$150 million. Annual expenditures include construction; contracts, supplies, and equipment; and miscellaneous expenditures. Construction related expenses totaled \$67.2 million of the \$150 million. Contracts, supplies, and equipment totaled \$75.4 million, the majority of which were for service contracts. The remaining \$7.46 million are from miscellaneous expenditures such as health care (USAF 2012d).

**Regional Employment and Income**

According to the U.S. Census Bureau (USCB), per capita income in the City of Columbus was \$21,455, as compared to the State of Mississippi’s per capita income of \$20,521, and the United States per capita income of \$27,915 (USCB, 2012a and 2012b). From 2007 to 2011, the City of Columbus unemployment rate was 16.1 percent, which was higher than the state average (10 percent) and the United States average (8.7 percent) (USCB, 2010b). In the City of Columbus, the leading non-governmental industries in 2010 were education, health, and social services (23.4 percent of working civilian population); arts, entertainment, recreation, accommodation, and food services (14.4 percent of the working civilian population), and manufacturing (12.4 percent of working civilian population) (USCB, 2010b).

**Existing Personnel**

Buildings 634, 640, and 642 have a total population of 89 personnel, all of whom serve mostly administrative and office functions (detailed in Table 3-7) (USAF, 2010a).

**Table 3-7  
Existing Personnel**

<b>Building User</b>	<b>Personnel</b>	<b>Number of Personnel</b>
Building 634	QAE	22
Building 640	AMC	62 <sup>1</sup>
Building 642	T-Combs	5
<b>TOTAL</b>		<b>89</b>

Source: Modified from USAF 2010a

<sup>1</sup> – Tenants from Building 630 have been removed from this value.

## 3.12 GROUND SAFETY

### 3.12.1 Definition of the Resource

The Unified Facilities Criteria (UFC) 4-010-01 establishes standards that provide minimum levels of protection against terrorist attacks for DoD-occupied buildings. In addition to Anti-Terrorism (AT) requirements, installation buildings should comply with all fire safety codes.

### 3.12.2 Affected Environment

The existing buildings are currently located within a secure (gated) perimeter that encompasses the entire installation, but have no additional restriction to access to the airfield. Due to its proximity to Lockhart Street, Building 640 is currently not in compliance with AT standoff distance requirements for roads and parking (USAF, 2012a). Additionally, Building 640 does not currently meet all necessary fire safety codes. The building is not equipped with a sprinkler system and is currently grandfathered into fire safety code compliance until a renovation of at least 50% of the structure occurs (USAF, 2013c).

## 3.13 ENVIRONMENTAL JUSTICE

### 3.13.1 Definition of the Resource

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, specifies 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 actions on minority and low income communities, including human health, economic, and social effects when such analysis is required by NEPA.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, mandates the investigation of environmental effects on children. This EO acknowledges that children may suffer disproportionately from environmental health risks and safety risks; therefore, each federal agency is required to make it a priority to identify and assess environmental health and safety risks on children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

### 3.13.2 Affected Environment

The two census tracts potentially affected by the Proposed Action were used to determine presence of an environmental justice community and this section presents data summarizing the existing conditions of these census tracts. The census tracts potentially affected are Census Tracts 1.02 and 2. This analysis follows the *Air Force Interim Guidance for Environmental Justice Analysis*, November 1997 and the CEQ Environmental Justice Guidance under NEPA, December 1997.

In order to determine if minority and low-income populations or children are disproportionately impacted by the Proposed Action or alternatives, two areas of comparison must first be determined:

- The area potentially affected by impacts from resources or Region of Influence (ROI) (i.e., air quality, noise, land use).
- The larger regional community that includes the affected area and serves as a Community of Comparison (COC).

Impacts to Environmental Justice communities would be directly related to impacts from other resource areas covered in this EA. The ROIs for the environmental justice analysis includes the two census tracts that encompass impacts from resource areas. The COC is the regional area surrounding the ROI that is the demographic area used to compare and analyze the potential environmental justice impacts that results in the identification of an environmental justice community.

Disadvantaged groups within the ROI and COC, including low-income and minority communities, are specifically considered in order to assess the potential for disproportionate occurrence of impacts.

- *Minority Population:* Black or African Americans, American Indians and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and some other race. For the 2010 U.S. Census, race and Hispanic origin (ethnicity) were considered two separate concepts and were recorded separately. For the purposes of this analysis, the total minority race population will be separate from the total Hispanic population to determine total minority race population from the Hispanic total within the affected areas.
- *Low-Income Population:* Persons living below the poverty level, according to income data collected in U.S. Census 2010.

Table 3-8 summarizes census data for minority and low income populations for Census Tracts 1.02 and 2. The Proposed Action is located within Census Tract 2. Additional information for comparison is provided for the City of Columbus, Lowndes County, the State of Mississippi, and the United States.

**Table 3-8  
Percent Minority Population and Low-Income Population**

<b>Demographic Area</b>	<b>Total Population</b>	<b>Total Hispanic/Latino Population</b>	<b>Percent Hispanic/Latino</b>	<b>Total Minority Race Population</b>	<b>Percent Minority Race<sup>a</sup></b>	<b>Total Low-Income Population</b>	<b>Percent Low Income</b>
<b>Region of Influence (ROI)</b>							
Census Tract 1.02	2,908	27	0.9	1,152	39.6	518	17.8
Census Tract 2	1,505	113	<b>7.5</b>	448	29.8	107	7.1
<b>Community of Comparison (COC)</b>							
City of Columbus	23,688	288	1.2	14,611	61.7	7,651	32.3
Lowndes County	59,533	967	1.6	27,012	45.4	14,169	23.8
Mississippi	2,956,700	75,626	2.6	1,188,825	40.2	638,647	21.6
United States	306,603,772	49,215,563	16.1	79,436,759	25.9	43,844,339	14.3

Source: USCB 2010a and USCB 2010b

Notes:

<sup>a</sup> Minority Race includes Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; and some other race.

Bold text notates the presence of an Environmental Justice population

COC – Community of Concern

ROI – Region of Influence

At least one criteria listed below must be met to determine if an environmental justice community is present:

- Affected area’s percentage of minority or low-income population is greater than that of the general population, the affected area is considered to be a minority or low-income population.
- The minority population (including Hispanics or Latinos) or low-income population is greater than 50 percent, this is considered a majority-minority or majority low-income population.

According to the percentages listed in Table 3-8, there is an environmental justice community present in Census Tract 2, because there is a higher Hispanic/Latino percentage than that of the general population.

**Chapter 4**

**Environmental Consequences**





## **CHAPTER 4: ENVIRONMENTAL CONSEQUENCES**

### **4.1 SUMMARY OF IMPACTS DETERMINATIONS**

This chapter describes the potential environmental consequences that are likely to occur as a result of implementation of the Proposed Action or No-action Alternative. The No-action Alternative provides a baseline against which the impacts of the Proposed Action can be compared. Discussion of mitigation measures and best management practices are included, as necessary. If the actions result in irreversible or irretrievable results, it is noted within the sections below. Criteria and assumptions used to evaluate potential impacts are discussed at the beginning of each section.

The activities associated with implementation of the Proposed Action would not change the current mission of the installation. Demolition of the existing facilities and the construction of the AMOC would continue to support the current and future mission of the installation and the DoD.

### **4.2 AIR QUALITY**

The following factors were considered in evaluating air quality: (1) the short- and long-term air emissions generated from building construction and demolition; and on-road vehicle activities; (2) the type of emissions generated; and (3) the potential for emissions to result in ambient air concentrations that exceed one of the National Ambient Air Quality Standards (NAAQS) or SIP requirements. The air pollutant emission calculations for the Proposed and No-action Alternative included in the sections below are detailed in Appendix C.

#### **4.2.1 Proposed Action**

The Proposed Action would result in short-term emissions during the construction of the AMOC, demolition of existing buildings, and the removal of existing roadway (i.e. asphalt/concrete). There would be minimal ambient air impacts from these localized short-term emissions that would quickly dissipate away from the activity source. Emissions for the Proposed Action are summarized in Table 4-1. The consolidation of existing aging separate facilities into new single energy efficient facility would possibly reduce the number of emission sources from what currently exists in the buildings scheduled for demolition. The new emission sources would be more efficient than the existing sources, thus there would likely be a decrease in the long-term emissions associated with the operation of these facilities.

For the purpose of estimating emissions, it has been conservatively assumed that all short-term construction/demolition emissions associated with the Proposed Action would take place during a one year period.

Review of emissions from Proposed Action in Table 4-1 indicates that the greatest percentage of impact to the annual local emissions during the Proposed Action would be short-term emissions of NO<sub>x</sub> at 0.036 percent of the 2008 Lowndes County Emissions. The short-term increase in CO,

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VOC, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> emissions are minimal and would be expected to have minimal impact on the air quality in Lowndes County. These emissions would be temporary, localized and would be eliminated after the activity is completed.

The emission of minor amounts of air pollution would be unavoidable; however, the individual and cumulative impacts during the Proposed Action projects would have little impact on the local emissions, as shown in Table 4-1.

**Table 4-1**  
**Expected Short-Term Annual Emissions from Proposed and**  
**No-Action Alternative**

Source	CO	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Proposed Action (tpy)	4.5	0.39	2.0	0.12	0.34	0.13
No-Action Alternative	0	0	0	0	0	0
2008 Lowndes County (tpy) <sup>a</sup>	17,629	5,752	5,573	3,206	6,027	1,521
Percent of Lowndes County Emissions (Proposed Action)	0.026	6.78E-03	0.036	3.74E-03	5.46E-03	8.55E-03

<sup>a</sup> Includes emissions from point, area, on-road, and non-road mobile sources. Lowndes County emissions come from an extract of National Emission Inventory (NEI), the emissions database developed by USEPA (USEPA, 2013b).

CO = carbon monoxide

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

SO<sub>x</sub> = sulfur oxides

tpy = tons per year

VOC = volatile organic compound

### Greenhouse Gases

Under the Proposed Action approximately 613 metric tons of CO<sub>2eq</sub> would be released. The amount of CO<sub>2eq</sub> released under the Proposed Action represents less than 0.00001 percent of the 2011 U.S. anthropogenic emissions of CO<sub>2eq</sub>. This is a limited amount of emissions that would not contribute significantly to climate change, but any emission of GHGs represents an incremental increase in global GHG concentrations. The USAF is poised to support climate-changing initiatives globally, while preserving military operations, sustainability, and readiness by working, where possible, to reduce GHG emissions (USAF, 2010b).

Activities under the Proposed Action are not subject to the requirements of the USEPA National Greenhouse Gas Reporting Rule. The Proposed Action does include the construction of a new facility that might be subject to requirements under Executive Order (EO) 13514. The construction and on-road vehicles used under the Proposed Action would not be considered in GHG target reductions under EO 13514.

#### **4.2.2 No-action Alternative**

There would be no changes from baseline conditions for emissions or GHGs associated with the No-action Alternative.

**4.2.3 Measures to Reduce Impacts**

Little impact to local air quality would be expected from the Proposed Action at Columbus AFB. Therefore, no mitigative actions would be required. BMPs would include watering the disturbed area of the construction, covering dirt and aggregate trucks and/or piles, prevention of dirt carryover to paved roads, the use of erosion barriers and wind breaks, and the use of bio-diesel fuel in construction and transport vehicles.

**4.3 NOISE**

The following factors were considered in evaluating potential noise impacts: (1) the degree to which noise levels generated by construction activities were higher than the ambient noise levels; (2) the degree to which there is annoyance and/or interference with activity as a result of the alternative; and (3) the proximity of potential noise-sensitive receptors to the noise source.

Table 4-2 lists noise levels associated with the types of construction equipment expected to be utilized during demolition, site preparation, construction, and finishing work associated with the Proposed Action. As shown in Table 4-2, the construction equipment produces peak SPLs ranging from 75 to 85 dBA at 50 feet from the source, which decreases by 6 dBA with every doubling of the distance from the source. It should also be noted that this table includes the level generated, but does not account for the ability of sound to be reflected/absorbed by nearby objects, which could further reduce noise levels.

**Table 4-2  
Construction Equipment Peak Sound Pressure Levels**

Equipment	Generated Noise <sup>a</sup> dBA				
	50 ft	100 ft	200 ft	400 ft	800 ft
Backhoe	78	72	66	60	54
Compactor	83	77	71	65	59
Crane	81	75	69	63	57
Dump Truck	76	70	64	58	52
Excavator	81	75	69	63	57
Front-end Loader	79	73	67	61	55
Grader	85	79	73	67	61
Paver	77	71	65	59	53
Pickup Truck	75	69	63	57	51
Roller	80	74	68	62	56
Scraper	84	78	72	66	60

Source: USDOT, 2006

Notes:

<sup>a</sup> Noise from a single source.

dBA - "A-weighted" decibel

ft - feet

Noise naturally dissipates by atmospheric attenuation as it travels through the air. Factors that can affect the amount of attenuation are ground surface, foliage, topography, and humidity. Assuming that noise from the construction equipment radiates equally in all directions, the sound intensity would diminish inversely as the square of the distance from the source.

Impacts from noise would be considered significant if the Proposed Action resulted in noise levels above 75 dBA, the requisite level to protect health and welfare with an adequate margin of safety (USEPA, 1974).

#### 4.3.1 Proposed Action

The increased construction noise levels associated with the Proposed Action would come from the demolition of existing infrastructure and construction of the new consolidated AMOC. The noise associated with the operation of machinery on construction sites is typically short-term, intermittent, and highly localized; therefore, would not accumulate over time and would last only as long as the duration of construction and demolition activities.

It is anticipated that typical construction vehicles and equipment to be used during demolition, site preparation, construction, and finishing work would be similar to those presented in Table 4-2. Construction equipment expected to be used at the site would produce peak SPLs ranging from 75 to 85 dBA at 50 feet from the source (USDOT, 2006). It should also be noted that Table 4-2 includes the SPL generated at various distances from the source, but does not account for the ability of sound to be reflected/absorbed by nearby objects, which could further reduce noise levels.

Air Force and civilians working in Buildings 449, 456, 636, and 637 near the proposed project sites would experience short-term, elevated noise levels due to demolition and construction activities. In some cases, these facilities are immediately adjacent to the proposed construction sites. Building 637 is located approximately 50 feet from the proposed demolition of Buildings 634 and 642; Building 636 is located approximately 70 feet from the proposed demolition of Buildings 634 and 640, and approximately 70 feet from the proposed AMOC site; and Buildings 449 and 456 are both over 100 feet from the proposed construction and demolition. Workers in the closest facilities would experience noise levels similar to those noted in Table 4-2, not accounting for additional noise reduction properties of building materials. Considering a 20 dB decrease in noise levels due to noise attenuating properties of windows and walls (U.S. Navy, 2005), building occupants of facilities within 50 feet of construction could expect to experience peak noise levels of 65 dBA or less which is below the 75 dBA noise level requisite to protect the public health and welfare. Also note that these buildings currently lie either within DNL 70-74 dB or DNL 75-79 dB noise contours from aircraft operations; and are therefore exposed to higher average noise levels on a daily basis.

The closest noise-sensitive receptor to the project site is the park, located approximately 850 feet southwest from the site. Due to the distance from the site, short-term, peak, outside noise levels from construction activities would be approximately 55 dBA to 61 dBA at the park, which is

below the 75 dBA noise level requisite to protect health and welfare with an adequate margin of safety and, therefore, would be considered a minor impact.

#### **4.3.2 No-action Alternative**

Under the No-action Alternative there would be no impact to the baseline noise environment as described in Subsection 3.3.2. Buildings 634 and 642 would remain on the boundary of the DNL 75-79 dB noise contours, instead of being consolidated wholly inside the DNL 70-74 dB noise contour.

#### **4.3.3 Measures to Reduce Impacts**

No mitigation is proposed. BMPs include equipping noise-generating heavy equipment at the project site with the manufacturer's standard noise control devices (i.e., mufflers, baffling, and/or engine enclosures). All equipment should be properly maintained to ensure that no additional noise from worn or improperly maintained equipment parts is generated. Construction activities would occur between 0700 and 1900 hours and would be conducted according to OSHA regulations 29 CFR 1910.95 and 29 CFR 1926.52. Occupational exposure to the noise from heavy equipment could be reduced by requiring workers to wear appropriate hearing protection. Hearing protective devices such as ear plugs or ear muffs should be worn at all locations where workers may be exposed to high noise levels.

### **4.4 LAND USE**

Impacts to land use resources as a result of either the Proposed Action or No-action alternative would be considered significant if implementation of the action resulted in land use designations that are incompatible with the current Columbus AFB Land Use Plan.

#### **4.4.1 Proposed Action**

The consolidated AMOC facility would be constructed within an area designated as aircraft operations and the AMOC operations would be compatible with this land use designation. In addition, the new construction would be located entirely within APZ I and outside the Airfield CZ in accordance with AFI 32-7063 and would therefore also reduce Columbus AFB CZ conflicts. Although no land use restrictions were placed on IRP Site SS-30 (USAF, 1995), the proposed project area is located within 100 feet of the IRP Site SS-30 and would require obtaining an IRP waiver from HQ AETC/A7C prior to construction. The Proposed Action would not be expected to result in land use designations that are incompatible with the current Columbus AFB Land Use Plan.

#### **4.4.2 No-action Alternative**

Under the No-action Alternative, land use designations would remain as outlined in Subsection 3.4. Building 634 would remain within the Airfield CZ area and the USAF would not achieve their goal of eliminating CZ conflicts by reconstructing facilities outside the CZ. Buildings 640

and 642 would remain outside the CZ and within APZ I. Operations would remain compatible with the current land use designation as aircraft operations.

#### **4.4.3 Measures to Reduce Impacts**

Since the Proposed Action would not be expected to result in land use designations that are incompatible with the current Columbus AFB Land Use Plan, no mitigation measures or BMPs would be necessary.

### **4.5 NATURAL RESOURCES**

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of the Proposed Action on physical resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development. Analysis of potential impacts on geological resources typically includes:

- Identification and description of resources that could potentially be affected.
- Examination of the Proposed Action and alternatives and the potential effects they would have on the resource.
- Provision of mitigation measures in the event that potentially adverse impacts are identified.

Effects on geology and soils would be significant if they alter the lithology, stratigraphy, and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or result in long-term erosion without the implementation of management techniques.

#### **4.5.1 Proposed Action**

Under the Proposed Action grading and construction activities are expected to be implemented. Proposed Action demolition and construction activities would occur in currently developed industrial land use areas and would not be expected to have any adverse impacts on overall natural resources. The proposed demolition areas have been previously disturbed by construction activities where buildings or roadways now exist, including the establishment of underground utilities and drainage culverts, roadways and parking lots associated with the buildings. The soils in the vicinity of these activities have been altered over time and the proposed demolitions areas are permanently disturbed with existing facilities or roadways. The demolition of buildings may disturb minimal soil immediately adjacent to the building foundations. If the foundations are removed, the disturbances of existing soils are anticipated to be minimal with backfilling of clean soils, re-grading to flat surface topography and re-vegetation of building footprint and disturbed areas.

**FINAL**

**ENVIRONMENTAL CONSEQUENCES**

Proposed construction activities would cause long-term or permanent loss of vegetation within the building footprint, and possibly subsequent erosion of loose fine-grained soil materials, such as down-gradient of built-up areas. However, this would be minimal in the new building area as most of the area is within the footprint of two previously existing building areas. The construction of buildings would disturb soil within the building footprint and soil immediately adjacent to the building foundation. The disturbances of existing soils are anticipated to be minimal, with backfilling of clean soils surrounding new building foundation, re-grading of surrounding areas to flat surface topography and re-vegetation of disturbed areas. For the proposed construction of the trailer storage area at the recently demolished Building 630, restored ground surface conditions could be disturbed by installation of gravel surface cover to support trailer installation and parking. For the proposed Lockhart Street removal, ground surface conditions adjacent to the street pavement could be disturbed during pavement removal. Disturbance would be minimal and temporary, with re-grading of the former pavement areas to flat surface topography and re-vegetation of disturbed areas.

Due to its location in a zone with low earthquake hazard potential, no seismic impacts are anticipated to occur in association with the proposed activities.

No topographic or geologic impacts are anticipated to occur in association with construction and demolition activities. The topography would undergo minor alterations, but the overall topography at the site would remain largely unchanged, with the exception of any construction related site grading.

Areas with clayey soils would be less susceptible to erosion. Building foundations would extend into the subsurface and underground utility and drainage lines may be installed, resulting in soil excavations and backfilling with engineered-specific soils. The impervious surfaces of paved areas impede erosion of soils directly beneath, but may increase erosion of soils down-grade of the paved areas if adequate drainage controls, such as drainage system BMPS, are not implemented. The areas and percent of the soil units that would be impacted by the Proposed Action are presented in Table 4-3.

**Table 4-3  
Areas and Percent of Soil Units Affected by the Proposed Action**

<b>Soil Unit</b>	<b>Construction/Demolition Area (acres)</b>	<b>Total Project Area (acres)</b>	<b>Percent of Impacted Soil Unit</b>
Prentiss-Urban land complex	0.16	0.72	21.69
Urban land	1.76	5.09	34.61
<b>Total</b>	<b>1.92</b>	<b>5.81</b>	<b>33.01</b>

As a result of anticipated disturbance at the Proposed Action at the construction sites, erosion would be expected to occur over the short-term during construction operations; however, this would be minimized through the use of BMPs such as silt fencing and rock filter dams. This would impact a nominal portion of the Base and would likely be localized to those proposed

facility additions and immediate areas. In areas where impervious surfaces are created by construction, such as building foundations, no long-term soil erosion is anticipated.

#### **4.5.2 No-action Alternative**

Under the No-action Alternative, natural resources, including geology, seismicity, soils and topography would not change from the baseline conditions described in Subsection 3.5.2.

#### **4.5.3 Measures to Reduce Impacts**

Under the Proposed Action only small scale mitigation measures would be needed. BMPs to prevent soil loss and minimize the exposure of surface soils during construction and demolition could include implementation of site-specific erosion control plans, thereby reducing the total amount of soil lost to the proposed activities.

### **4.6 WATER RESOURCES**

The following factors were considered in evaluating potential impacts to water resources from proposed project activities: (1) changes in discharge flows and pollutant loads that may affect water quality of surface waters, and (2) increases in groundwater interaction allowing for exposure or contamination. Impacts to surface water would be considered significant if discharge flows or pollutant loads from the project area were increased, affecting aquatic habitat or water quality. Impacts to groundwater would be considered significant if groundwater interaction was increased in the project area, allowing for exposure or contamination. Since no construction or permanent improvements associated with the Proposed Action would occur within the 100- or 500-year floodplain and no increases in stormwater flows are anticipated, floodplains are not discussed further in this analysis.

#### **4.6.1 Proposed Action**

##### **Surface Water**

As no surface waters are located within the project area, no direct impacts to any surface waters are anticipated to occur as part of the Proposed Action. As further supported in Subsections 4.10 (Infrastructure and Utilities), no significant increases in discharge flows or pollutant loads would be expected as a result of the Proposed Action. During construction, minor and temporary indirect impacts to surface water from erosion and sedimentation would be minimized with the implementation of a SWPPP and associated BMPs as required by the MDEQ Small or Large Construction General Permit (MSR10 or MSR15, respectively). All improvements would be designed, reviewed, and implemented according to applicable Municipal, State, and federal codes, criteria, standards, and specifications. For these reasons, impacts to surface water quality from erosion and sedimentation would be expected to be negligible.



## **Groundwater**

Construction associated with the Proposed Action is not anticipated to result in a significant increase in groundwater interaction.

### **4.6.2 No-action Alternative**

The No-action Alternative would have no significant impacts on water resources.

### **4.6.3 Measures to Reduce Impacts**

Minor and temporary impacts to water resources from construction erosion and sedimentation would be minimized with the implementation of a SWPPP and associated BMPs as required by the MDEQ Small or Large Construction General Permit (MSR10 or MSR15, respectively). All improvements and modifications associated with the proposed project would be designed, reviewed, and constructed according to applicable Municipal, State, and federal codes, criteria, standards, and specifications.

## **4.7 BIOLOGICAL RESOURCES**

Impacts to biological resources would be considered significant if the Proposed Action or the No-action Alternative resulted in:

- An adverse effect to available habitat or individual wildlife that resulted in a change of species composition on the Base;
- An adverse effect to any federal, state, or regionally sensitive species of concern;
- An adverse effect to endangered, threatened or candidate species or if it adversely modified or destroyed their critical habitat under ESA;
- Adverse effects on birds protected by the MBTA.
- An impact to federally protected wetlands as promulgated under Section 404 of the CWA through direct removal, filling, changes in hydrology, or other means; or

### **4.7.1 Proposed Action**

#### **Vegetation**

Under the Proposed Action all activities would be conducted in previously developed and disturbed areas that are improved and regularly maintained. While there may be temporary disturbance to maintain turf and landscaping in the project area during construction, once the AMOC facility is complete the immediately surrounding area would be returned to regular landscaping maintenance activities. No activities would be conducted in unimproved or naturally vegetated areas. Therefore, impacts to vegetation as a result of the Proposed Action would be expected to be negligible.

### **Wildlife**

While not likely due to the lack of habitat within the project area, wildlife (i.e. gray or fox squirrels) potentially in the project area would be temporarily displaced during construction activities. These potential, short-term disturbances to wildlife from noise and construction activities would be expected to be minor. Long-term impacts to wildlife are not anticipated to occur as the proposed project is located wholly within a previously developed area.

### **Threatened and Endangered Species**

As detailed in Subsection 3.7.2.3, no critical habitat for federally-listed species is designated on Columbus AFB (USFWS, 2013b), and USFWS records indicate that there are no federally protected species or their habitats within the project vicinity (USFWS, 2013c). Therefore the Proposed Action is not anticipated to have an effect on federally-listed threatened or endangered species.

### **Migratory Birds**

If construction of the proposed project occurs during the nesting season, it is possible that the Proposed Action could result in an incidental take of migratory bird nests if BMPs are not implemented. Although the project area does not contain high value habitat for birds, several migratory bird species could utilize structures or landscaping for nesting or roosting (e.g., barn swallow, chimney swift, common nighthawk, killdeer, house finch, grackles). Some migratory species could be impacted by the proposed demolition actions if these actions occur during the migratory bird species nesting season. Potential impacts to nesting migratory birds could include destruction of nests, incidental take of eggs, and young. These impacts would be avoided with implementation of the noted BMPs discussed below in Subsection 4.7.3.

### **Wetlands**

As detailed in Subsection 3.7.2.5 no wetlands are located within the vicinity of the project or within the project area (USAF, 2005), therefore the Proposed Action would have no effect on wetlands.

#### **4.7.2 No-action Alternative**

Under the No-action Alternative, there would be no demolition or construction related to the installation of the new AMOC as described under the Proposed Action. Therefore, there would be no direct change in the baseline conditions described in Subsection 3.7.

#### **4.7.3 Measures to Reduce Impacts**

To minimize potential impacts to biological resources, all areas cleared of vegetation would be re-vegetated with similar non-native turf grasses. Any vegetation clearing associated with installation and abandonment activities should be conducted during the non-breeding season for most migratory birds (August through February) to ensure compliance with the MBTA. If these

construction activities were to begin during the active breeding season, a site-specific survey for nesting migratory birds should be conducted at least two weeks prior to any vegetation clearing. If nests are found during the survey that contains eggs or young, construction should be postponed until the birds have left the nest.

During installation and demolition activities, there is also the potential for the spread and proliferation of invasive or noxious species. Therefore, only non-invasive species of vegetation would be utilized for re-vegetation.

#### **4.8 CULTURAL RESOURCES**

An impact would be considered significant if it substantially diminished one or more of a historic property's aspects of integrity, which includes location, design, setting, materials, workmanship, feeling, and association.

##### **4.8.1 Proposed Action**

No archaeological or non-archaeological historic properties are present within the project footprint of the Proposed Action. Therefore, the Proposed Action would have no effect on cultural resources.

##### **4.8.2 No-action alternative**

The No-action Alternative would have no effects on cultural resources. Therefore, there would be no change in the baseline conditions described in Subsection 3.8.

##### **4.8.3 Measures to Reduce Impacts**

Since there would be no impacts to cultural resources as a result of the Proposed Action or No-action Alternative, no mitigation measures or BMPs would be necessary.

#### **4.9 HAZARDOUS MATERIALS AND SUBSTANCES**

This section includes a description of the potential impacts to hazardous materials and waste including storage, waste, IRP sites, ACM, and LBP. Impacts to hazardous materials and substances would be considered significant if an action resulted in non-compliance with applicable regulations for hazardous materials and waste.

##### **4.9.1 Proposed Action**

The use of hazardous materials as a result of the Proposed Action is expected to be limited to construction activities (paints, solvents) and routine vehicle maintenance (fuels, oils, and lubricants). The use, handling, storage, and transport of hazardous materials would be managed in accordance with *AFI 32-7086, Hazardous Materials Management*. Any hazardous waste generated as a result of the Proposed Action would be handled in accordance with existing waste management policies outlined in the HWMP.

Under the Proposed Action, no construction activities are planned within an identified IRP site. However, construction of the AMOC facility would occur within 100 ft of an identified IRP site (SS-30); therefore a waiver for construction will be required from HQ AETC/A7C prior to construction.

As discussed in Subsection 3.9, ACM has been identified in Buildings 634, 640, and 642. Demolition of these structures would result in generation of ACM waste.

Buildings constructed prior to 1978 may contain LBP. As discussed in Subsection 3.9.2.4, surveys for presence of LBP have not been conducted for Buildings 634, 640, and 642. Prior to demolition activities associated with the Proposed Action, the potential presence of LBP would need to be evaluated. In addition to the building materials, the LBP evaluation should include piping, equipment, and painted metal structures. If these buildings were found to contain LBP, demolition activities and disposal of materials containing LBP would be conducted in accordance with applicable State and Federal regulations.

All waste disposal would be in compliance with applicable regulations for hazardous materials and waste; therefore, no impacts to or from hazardous wastes or materials would be expected as a result of the Proposed Action.

#### **4.9.2 No-action Alternative**

Under the No-action Alternative, no change in the current conditions or procedures for managing and disposing hazardous materials and waste would be expected; therefore, no impacts would be expected to or from hazardous materials and hazardous waste.

#### **4.9.3 Measures to Reduce Impacts**

During demolition activities associated with the Proposed Action, any ACM or LBP removed would be managed according to facility management plans and State and Federal regulations.

### **4.10 UTILITIES AND INFRASTRUCTURE**

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 Action 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; and (4) the degree to which the increased demands from the Proposed Action would reduce the reliability of transportation systems. Impacts to utilities could be considered significant if implementation of the Proposed Action resulted in a change in demand which exceeded the capacity of the utility providers or system such that additional capacity could not be acquired. Impacts to transportation systems could be considered significant if implementation of the Proposed Action resulted in a decrease in the level of service provided by transportation systems such that additional development of the systems could not support the increased usage.

#### **4.10.1 Proposed Action**

##### **Stormwater**

Demolition and construction activities, including land clearing activities, could potentially increase erosion and sedimentation in stormwater runoff if conducted without BMPs. However, the Proposed Action would require compliance with the MDEQ Small or Large Construction General Permit (MSR10 or MSR15, respectively), previously discussed in Subsection 3.10.2.1 (Stormwater), as appropriate, which includes the integration of a SWPPP. The SWPPP would include temporary stormwater, erosion, and sedimentation controls along with other BMPs for the duration of demolition or construction in order to minimize increases in stormwater flows and pollutant loads and comply with NPDES.

Permanent modifications associated with the Proposed Action, such as decreased impervious cover, would result in reduced stormwater flows and pollutant loads. If carried forward, all improvements associated with the Proposed Action would be designed, reviewed, and installed according to applicable municipal, state, and Federal codes, criteria, standards, and specifications. Any stormwater plans required by permit, such as the SWPPP, would be updated accordingly and put into practice. For these reasons, impacts to stormwater quality would be expected to be minor and managed through the use of BMPs. The decrease in stormwater flow would result in a beneficial impact of reducing potential for water quality impacts. The Proposed Action would not be expected to exceed the stormwater system capacity.

##### **Potable Water**

Within the proposed project area there would be no permanent change to the population, and existing operations would only be relocated; therefore, the long-term water demand would remain the same. The Proposed Action would be expected to result in changes to potable water infrastructure to provide water service to the proposed building. If carried forward, all improvements would be designed, reviewed, and installed according to applicable municipal, state, and Federal codes, criteria, standards, and specifications. No interruption in water service would be expected. There would be no adverse impact to water supply and infrastructure as a result of permanent improvements associated with the Proposed Action.

During demolition and construction associated with the Proposed Action, an increase in construction workforce and activities (e.g., dust suppression activities) could result in a temporary minor increase in water demand. Water used for dust control could be delivered to construction sites by truck, and personnel could use portable restroom facilities, minimizing the increase in water demand. For these reasons, the impact to water supply resulting from demolition and construction associated with the Proposed Action would not be expected to exceed the system capacity.

### **Wastewater**

Permanent changes to the wastewater load and infrastructure as a result of the Proposed Action are expected to be minor. Within the proposed project area, there would be no expected permanent change to the population; therefore, the long-term wastewater load would remain the same. The Proposed Action would be expected to result in changes to wastewater infrastructure to provide service to the proposed building. If carried forward, all improvements would be designed, reviewed, and constructed according to applicable Municipal, State, and Federal codes, criteria, standards, and specifications. No interruption in wastewater service would be expected. There would be no adverse impact to the wastewater load and infrastructure as a result of permanent improvements associated with the Proposed Action.

During demolition and construction associated with the Proposed Action, an increase in construction workforce would result in a temporary minor increase in domestic wastewater load. Demolition and construction personnel could use portable restroom facilities managed by a qualified contractor, which would include off-site disposal of wastewater and thereby minimize any potential increases in wastewater load. For this reason, the impact to wastewater resulting from demolition and construction associated with the Proposed Action would be expected to be minor and would not impact the capacity of the wastewater treatment facility.

### **Electricity and Natural Gas**

Permanent changes to electricity and natural gas demands and infrastructure as a result of the Proposed Action would be expected to be minor. Within the proposed project area there would be no permanent change to the population, and existing operations would only be relocated; therefore, the long-term electricity and natural gas demand would remain the same. The Proposed Action would be expected to result in changes to electrical and natural gas infrastructure to provide service to the proposed building. If carried forward, all improvements would be designed, reviewed, and constructed according to applicable municipal, state, and Federal codes, criteria, standards, and specifications. No interruption in electrical or natural gas service would be expected. There would be no adverse impact to the electricity or natural gas demands or infrastructure as a result of permanent improvements associated with the Proposed Action.

During demolition and construction associated with the Proposed Action, associated activities could result in a temporary minor increase in electricity and natural gas demand. Electricity and natural gas used for demolition and construction activities could be supplied by portable generators and gas tanks, minimizing the increase in electricity and natural gas demand. For these reasons, the impact to electricity and natural gas resulting from demolition and construction associated with the Proposed Action would be expected to be minor and would not exceed the capacity of existing supply or infrastructure.

### **Telecommunications**

Permanent changes to telecommunications usage and infrastructure as a result of the Proposed Action would be expected to be minor. Within the proposed project area, no permanent change to the population would be expected; therefore, the long-term telecommunications usage would remain the same. The Proposed Action would result in changes to telecommunications infrastructure to provide service to the proposed building. If carried forward, all improvements would be designed, reviewed, and installed according to applicable municipal, state, and Federal codes, criteria, standards, and specifications. There would be no adverse impact to the telecommunications demands or infrastructure as a result of permanent improvements associated with the Proposed Action.

During demolition and construction associated with the Proposed Action, an increase in population accounting for construction and demolition personnel would be expected; however, this would not be expected to result in an increase in telecommunications load because these workers typically use mobile communications devices. For these reasons, no impact to telecommunications would be expected from demolition and construction associated with the Proposed Action.

### **Transportation**

Permanent changes to transportation as a result of the Proposed Action are expected to be minor. Within the proposed project area, no permanent change to the population is expected; therefore, long-term traffic volume would remain the same. The removal of Lockhart Street between C Place and Imes Street would redirect some traffic; however, the alternate route would not be expected to have an adverse impact on traffic flow. For this reason, impacts to transportation as a result of changes in traffic are not expected to decrease the existing level of service provided by the transportation system.

During demolition and construction associated with the Proposed Action, an increase in construction workforce and activities could result in a temporary increase in traffic. To minimize increased traffic, a Traffic Control Plan would be prepared prior to commencing demolition and construction activities. For these reasons, the impact to transportation resulting from demolition and construction associated with the Proposed Action would not be expected to decrease the existing level of service provided by the transportation system.

### **Solid Waste**

Within the proposed project area there would be no permanent change to the population, and existing operations would only be relocated; therefore, no long-term increases in solid waste generation would be expected. Demolition and construction associated with the Proposed Action would result in a temporary increase in solid waste generation. All additional waste produced during these activities would be disposed of in compliance with applicable Municipal, State, and Federal codes and regulations. Using average waste generation rates provided in the 2003 USEPA report, *Estimating Building-Related Construction and Demolition Materials Amounts*,

amounts of waste that would be generated during demolition and construction were estimated and are presented in Table 4-4.

**Table 4-4  
Demolition and Construction Solid Waste Generation Estimates**

<b>Building</b>	<b>Demolition Size (ft<sup>2</sup>)</b>	<b>Demolition Waste (ton)</b>	<b>Construction Size (ft<sup>2</sup>)</b>	<b>Construction Waste (ton)</b>
Building 634: Air Force Quality Assurance Evaluators (QAE)	3,840	303	9,985	22
Building 640: Aircraft Maintenance Contractors (AMC)	16,362	1,293	4,078	9
Building 642: T-38 COMBS (T-COMBS)	2,420	191	6,875	15
Lockhart Street	9,250	9,250	-	-
Total	31,872	11,037	20,938	46

**Notes:**

1. Average nonresidential demolition waste generation rate of 158 lb/ft<sup>2</sup> from USEPA, 2011 used to estimate demolition waste.
2. Average nonresidential construction waste generation rate of 4.34 lb/ft<sup>2</sup> from USEPA, 2011 used to estimate construction waste.

The schedule for Proposed Action demolition and construction is currently unknown. However, even if these activities were completed within 1 year, the total waste generated, less than 11,100 tons. While this temporary increase of solid waste disposal at Columbus AFB would represent an almost 94 percent increase (from approximately 118 tons per year), overall this disposal would be minor (< 4 percent) compared to the approximate 182,000 tons of waste accepted annually by the Columbus Class I Rubbish Landfill and the approximate 140,000 tons of waste accepted annually by the Golden Triangle Regional Landfill and the overall availability of both landfills. For these reasons, impacts to solid waste resulting from demolition and construction activities associated with the Proposed Action would not be expected to exceed the capacity of the Columbus Class I Rubbish or Golden Triangle Regional Landfills.

**4.10.2 No-action Alternative**

The No-action Alternative would result in no change to utility consumption, generation, or infrastructure. Therefore, conditions would remain as described in Subsection 3.10.

**4.10.3 Measures to Reduce Impacts**

Minor and temporary impacts to water resources from construction erosion and sedimentation would be minimized with the implementation of a SWPPP and associated BMPs as required by the MDEQ Small or Large Construction General Permit (MSR10 or MSR15, respectively). All improvements and modifications associated with the proposed project would be designed, reviewed, and constructed according to applicable Municipal, State, and federal codes, criteria, standards, and specifications.

Infrastructure within the project area would be updated under the Proposed Action according to applicable Municipal, State, and federal codes, criteria, standards, and specifications. With the



exception of solid waste, usage of utilities at Columbus AFB is not anticipated to be noticeably changed under the Proposed Action. Due short-term increase in solid waste from the demolition and construction activities, Columbus AFB would utilize both the Columbus Class I Rubbish and the Golden Triangle Regional Landfill to properly dispose of all solid waste materials.

#### **4.11 SOCIOECONOMICS**

The Proposed Action would not affect local populations, housing, or education; therefore, the socioeconomic analysis in this EA was limited to effects on the economy and on the temporary relocation of personnel. Socioeconomic impacts would be considered significant if long-term employment rates changed, if the amount of local business decreased, or if there was not a sufficient location to temporary relocate the displaced personnel causing a disruption of service of on-base personnel.

##### **4.11.1 Proposed Action**

Under the Proposed Action, the local economy would benefit from expenditures incurred from the construction and demolition associated with the AMOC. Construction materials and goods (e.g., gasoline for equipment and trucks) would be expected to be purchased from the local area. However, it should be noted that employment in the area would not increase since it is expected that the construction companies would utilize their current employees. The Proposed Action would not affect long-term employment rates or decrease local business.

During demolition and construction, 89 people would be temporarily displaced until the AMOC is completed. “Swing space,” or a temporary working environment, would be necessary during construction for the existing administrative functions of the 89 displaced personnel. During demolition and construction there would be ample “swing space” for administrative functions. “Swing space” would consist of temporary trailers brought in and placed in the footprint of the previously demolished Building 630. The trailers would be removed after the duration of construction. The trailers would be rented from the local area, which would provide a positive economic impact to the region.

##### **4.11.2 No-action Alternative**

Under the No-action Alternative, there would be no change in the baseline conditions described in Subsection 3.11. The 89 personnel located in Buildings 634, 640, and 642 would not be temporarily displaced.

##### **4.11.3 Measures to Reduce Impacts**

During construction, 89 employees would be temporarily relocated to “swing space” trailers in the Project Area so that daily flight schedules, directing all activities, and launch/recovery support m continue without disruption. Temporary trailers would be placed in the footprint of the previously demolished - Building 630 and removed after the duration of construction.

## 4.12 GROUND SAFETY

Impacts to ground safety would be considered significant if implementation of the Proposed Action or No-action Alternative resulted in noncompliance with AT and fire safety codes.

### 4.12.1 Proposed Action

Under the Proposed Action, long-term beneficial impacts to ground safety would be expected. Closure of a portion of Lockhart Street would maximize standoff distance to the newly constructed AMOC building and reduce the overall amount of needed road setbacks. Construction would meet or exceed the following AT design requirements:

- 82 foot (25 meter) standoff between on-site POV parking areas and exterior walls of primary gathering facilities.
- 82 foot (25 meter) standoff between on-site roads and exterior walls of primary gathering facilities.
- 33 foot (10 meter) standoff between trash enclosures and facility exterior walls (USAF, 2010a).

Increased security to the AMOC operations would result of the Proposed Action. The secure entrance to the airfield would be moved outside the new construction footprint, resulting in secure (fenced) access to the building in addition to the existing installation perimeter fence. In addition, all new construction would be completed in accordance with current fire safety codes to include at least the minimum requirements for sprinkler systems.

### 4.12.2 No-action Alternative

Under the No-action Alternative, no change to ground safety from the current conditions described in Subsection 3.12 would occur. Columbus AFB would not achieve compliance with AT setback requirements due to the proximity of Building 640 to Lockhart Street. Construction in accordance with current fire safety codes would also not be achieved; however, due to the building safety features previously grandfathered into compliance, the structure would remain in compliance until future building updates occur.

### 4.12.3 Measures to Reduce Impacts

No mitigation or BMPs for ground safety are recommended.

## 4.13 ENVIRONMENTAL JUSTICE

As discussed in Subsection 3.13, the USAF has issued guidance on environmental justice analysis and analysis of the environmental health and safety of children, minorities, and low-income populations as part of the Environmental Impact Analysis Process. In order to comply with EO 12898, ethnicity and poverty status in the study area have been analyzed. The ROI for each resource area has been evaluated within the COC in order to identify the presence or

absence of environmental justice populations. Additionally, to comply with EO 13045, environmental health and safety risks have been identified to determine if children could be disproportionately affected by the Proposed Action. Impacts would be considered significant if the human health or environmental impacts resulting from the Proposed Action were to disproportionately adversely impact children, or minority or low-income populations. The ROIs for the Proposed Action are the two census tracts potentially affected by the demolition and construction associated with the consolidated AMOC. Given the demographic composition of the ROIs, there is one environmental justice community present, due to the fact that Census Tract 2 has a higher Hispanic/Latino percentage than that of the general population. Since it is unknown which residents within Census Tract 2 are minorities, for purposes of this analysis, it was assumed that all residents are minorities. Census Tract 2 is hereinafter referred to as an environmental justice population.

#### **4.13.1 Proposed Action**

Most impacts would be localized to the project site and would not impact surrounding communities. Construction activities would result in a short-term increase in noise levels for the base population using the park; however, the distance of the construction activities to the park would result in an attenuation of construction noise below baseline noise levels. Demolition activities associated with the Proposed Action would cause short-term increases in air emissions and noise for the duration of the proposed demolition activities. However, emissions and noise would attenuate rapidly with distance from the demolition site and would be evenly distributed throughout the project area, thereby not disproportionately affecting a single population. Short-term traffic congestion would increase on the installation around the project site and would equally affect all who transit the area. Therefore, no disproportionate impacts to a single population from transportation impacts would be expected. Additionally, no children would be disproportionately impacted by the Proposed Action.

#### **4.13.2 No-action Alternative**

Under the No-action Alternative, there would be no change to baseline conditions described in Subsection 3.13 and no impacts to environmental justice communities.

#### **4.13.3 Measures to Reduce Impacts**

Since there would be no disproportionate impacts to a single population as a result of the Proposed Action or No-action Alternative, no mitigation measures or BMPs would be necessary.

### **4.14 CUMULATIVE EFFECTS**

There would not be any incremental significant adverse impacts to biological resources, natural resources, water resources, cultural resources, socioeconomic resources, or environmental justice from the Proposed Action and reasonably foreseeable future actions. Cumulative effects from other resource areas are described below.

### Air Quality

The Proposed Action at Columbus AFB would result in short-term emissions during the construction of the AMOC, the demolition of existing facilities, and the removal of existing roadway. The emissions would be temporary, localized and would be eliminated after the activity is completed. The short-term increase in emissions would be minimal when compared to the total 2008 Lowndes County annual emissions. The Proposed Action would increase the energy efficiency of facilities. Therefore, long-term emissions would not be expected to increase.

The short-term emissions from the Proposed Action would be from mobile sources (equipment and vehicles) and fugitive dust. These emissions quickly dissipate within the vicinity of activity source, thereby minimizing contribution to cumulative impacts from past, present, and reasonably foreseeable future projects that may be conducted in the area or at Columbus AFB.

The minimal cumulative impacts from the Proposed Action and other proposed projects would not be expected to have significant impacts on the local air quality. The limited amount of GHG emissions from the Proposed Action would not contribute significantly to climate change, but any emission of GHGs represents an incremental increase in global GHG concentrations.

### Noise

The cumulative projects described in Subsection 2.6 are primarily construction and demolition or road repair and maintenance. The projects are of temporary duration and would use similar equipment to that used under the Proposed Action; therefore, the noise impacts would not be appreciably different from the Proposed Action. Cumulative Projects in close proximity to the closest noise-sensitive receptor are discussed below.

**Relocation and Demolition of the Photo Lab.** The demolition of Building 820 associated with the relocation of the Photo Lab is located approximately 700 feet from the Proposed Action's closest noise-sensitive receptor. The combined noise levels at the park from the demolition associated with the Photo Lab relocation and the Proposed Action would range from 62-68 dBA, which is below the level requisite to protect public health. Therefore, there would not be a cumulative noise effect on the noise-sensitive receptor near the project site.

**Relocation and Demolition of the Library.** The demolition of Building 715 associated with the relocation of the Library is located approximately 200 feet from the park. The combined noise levels at the park from the demolition associated with the Library relocation and the Proposed Action would be 73 dBA, which is below the requisite to protect public health. Therefore, there would not be a cumulative noise effect on the noise-sensitive receptor near the project site.

### Land Use

The Proposed Action in addition to other projects included in Subsection 2.6 would contribute to the overall decrease in building footprint within the Airfield CZ. As part of the relocation and demolition of the photo lab, Building 820 would be demolished and operations would be

relocated out of the CZ to Building 724 in May 2014. All construction activities would result in land use designations that would be compatible with the current Land Use Plan.

### **Hazardous Materials and Substances**

The Proposed Action in combination with other Columbus AFB projects described in Subsection 2.6 may result in an increase of demolition waste containing ACM and LBP. However, all ACM and LBP waste will be managed with applicable regulations. Additionally, this removal would result in a beneficial impact of a reduction in ACM and LBP present at Columbus AFB.

### **Utilities and Infrastructure**

The Proposed Action would result in short-term minor impacts to utilities and infrastructure within the project area during the replacement of infrastructure. Impacts resulting from other anticipated future actions in the vicinity would be similar in nature and would result in continued updates to the base infrastructure. Therefore, no significant negative cumulative impacts to utilities and infrastructure would be expected as a result of the Proposed Action and other reasonably foreseeable future actions.

### **Ground Safety**

The Proposed Action, in combination with other Columbus AFB projects described in Subsection 2.6 would contribute to the overall compliance of the installation with current AT requirements. All new construction will also comply with current fire safety codes.

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**Chapter 5**

**List of Preparers**





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### CHAPTER 5: LIST OF PREPARERS

This EA has been prepared under the direction of Mr. Frank Lockhart Columbus AFB. Additional individuals, from associated federal agencies and from Weston Solutions, Inc., who contributed to the preparation of this document, are listed below in Tables 5-1 and 5-2, respectively.

**Table 5-1**  
**Agency Participation in NEPA Preparation**

Affiliation	Contact	Role
Columbus AFB (14 CES/CEIE)	Frank Lockhart, REM	Chief, Environmental Element, Acting
Columbus AFB (14 CES/CEIE)	Shane Reed, PG, REM	Chief, Installation Management Flight
14 FTW/JA (AETC)	Biron D. Ross	Attorney Advisor, Jude Advocate

**Table 5-2**  
**WESTON Participation in NEPA Preparation**

Name	Role/Specialty	Years of Experience
Erin Johnson	NEPA Manager and Resource Specialist, Biological Resources	9
Ashley Naber	Resource Specialist, Cultural Resources, Noise, Socioeconomic Resources, and Environmental Justice	2
Audrey Abbott, E.I.T.	Resource Specialist, Water Resources, and Utilities and Infrastructure	6
Kevin Wooster, P.G.	Resource Specialist, Natural Resources	26
Lori Kalich	Resource Specialist, Land Use, and Hazardous Materials and Substances, Ground Safety	6
Tamara Carroll	NEPA Senior Review	12
Barry Peterson	Resource Specialist, Air Quality	14
Phyllis Caldwell	Technical Editor	23
Corey Ricks	GIS Specialist	9

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**Chapter 6**

**Persons and Agencies Consulted**



## **CHAPTER 6: PERSONS AND AGENCIES CONSULTED**

Additional individuals and agencies that were consulted during the preparation of this EA are detailed in Table 6-1.

**Table 6-1  
Persons and Agencies Consulted**

<b>Agency</b>	<b>Individual</b>
State Clearinghouse for Federal Programs	Ms. Mildred Tharpe 1301 Woolfolk Building, Suite E 501 North West Street Jackson, MS 39213
U.S. Fish and Wildlife Service	Ms. Kathy W. Lunceford Mississippi Field Office Starkville, MS 39759

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**Chapter 7**

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**Appendix A**

**Interagency/Intergovernmental  
Coordination and Public Participation**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **General Scoping Letter**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

1 Oct 13

Shane Reed, PG, REM  
14 CES/CEI  
555 Simler Blvd, Suite 108  
Columbus AFB, MS 39710-6010

Ms. Mildred Tharpe  
State Clearinghouse for Federal Programs  
1301 Woolfolk Building, Suite E  
501 North West Street  
Jackson, MS 39213

SUBJECT: Aircraft Maintenance Operations Center Environmental Assessment  
Columbus Air Force Base, Mississippi

Dear Ms. Tharpe,

The 14th Flying Training Wing (FTW), Columbus Air Force Base (AFB), Mississippi is preparing an Environmental Assessment (EA) addressing potential environmental impacts from the proposed demolition of three facilities and the construction of one consolidated Aircraft Maintenance Operations Center. The environmental impact analysis process for this EA is being conducted by the Air Force Civil Engineer Center and the 14th FTW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation in the NEPA process by providing comments on the Proposed Action and any potential environmental consequences that might concern you. The Draft Description of the Proposed Action and Alternatives (DOPAA) is attached for your review. To facilitate cumulative impact analysis, we would appreciate identification of major projects in the vicinity that may contribute to cumulative effects. Please provide written comments or information at your earliest convenience but no later than 30 days from the date of this letter. When complete, a copy of the Draft EA and the proposed Finding of No Significant Impact (FONSI), if applicable, will also be made available for your review.

Please address your questions or comments on the DOPAA by mail to Mr. Shane Reed, 14 CES/CEI, 555 Simler Blvd, Suite 108, Columbus AFB, Mississippi 39710-6010.

Sincerely,

A handwritten signature in black ink, appearing to read "Shane Reed", is written over a faint circular stamp.

Shane Reed, PG, REM, Chief  
Installation Management Flight

Attachments: Final Draft DOPAA





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

1 Oct 13

Shane Reed, PG, REM  
14 CES/CEI  
555 Simler Blvd, Suite 108  
Columbus AFB, MS 39710-6010

Ms. Kathy W. Lunceford  
U.S. Fish and Wildlife Service  
Mississippi Field Office  
Starkville, MS 39759

SUBJECT: Aircraft Maintenance Operations Center Environmental Assessment  
Columbus Air Force Base, Mississippi

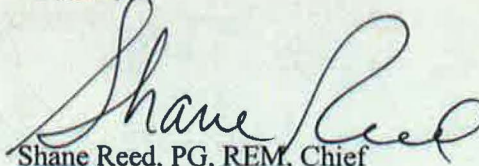
Dear Ms. Lunceford,

The 14th Flying Training Wing (FTW), Columbus Air Force Base (AFB), Mississippi is preparing an Environmental Assessment (EA) addressing potential environmental impacts from the proposed demolition of three facilities and the construction of one consolidated Aircraft Maintenance Operations Center. The environmental impact analysis process for this EA is being conducted by the Air Force Civil Engineer Center and the 14th FTW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation in the NEPA process by providing comments on the Proposed Action and any potential environmental consequences that might concern you. The Draft Description of the Proposed Action and Alternatives (DOPAA) is attached for your review. To facilitate cumulative impact analysis, we would appreciate identification of major projects in the vicinity that may contribute to cumulative effects. Please provide written comments or information at your earliest convenience but no later than 30 days from the date of this letter. When complete, a copy of the Draft EA and the proposed Finding of No Significant Impact (FONSI), if applicable, will also be made available for your review.

Please address your questions or comments on the DOPAA by mail to Mr. Shane Reed, 14 CES/CEI, 555 Simler Blvd, Suite 108, Columbus AFB, Mississippi 39710-6010.

Sincerely,

  
Shane Reed, PG, REM, Chief  
Installation Management Flight

Attachments: Final Draft DOPAA

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**Enclosure for Scoping Letter**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## DRAFT

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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- 1
- 2 **Cover Sheet**
- 3 **Responsible Agency:** Department of the Air Force, Air Education and Training Command  
4 (AETC), 14th Flying Training Wing (FTW), Columbus Air Force Base (AFB), Lowndes County,  
5 Mississippi (MS).
- 6 **Proposed Action:** To demolish three facilities (Buildings 634, 640, and 642) and consolidate  
7 these functions into one proposed construction of an Aircraft Maintenance Operations Center  
(AMOC).
- 8 **Point of Contact:** Mr. Frank Lockhart, Conservation Program Manager, 14 Civil Engineer  
9 Squadron/Civil Engineer Installation Management - Environmental Element (CES/CEIE), 555  
10 Similer Blvd, Suite 108, Columbus AFB, MS 39710-6010; United States; (662) 434-7958
- 11 **Report Designation:** Draft Environmental Assessment
- 12 **Abstract:** The Aircraft Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE),  
13 and T-38 Contractor Operated and Maintained Base Supply (T-COMBS) staff currently manage  
14 the daily flight schedule, direct all activities for 219 aircraft with over 85,000 flying hours each  
15 year, and provide launch/recovery support for 60,000 sorties each year. The Proposed Action  
16 would consolidate the headquarters for the AMC, QAE, and T-COMBS staff into the AMOC.  
17 These personnel are currently located within three separate underutilized facilities: Buildings 640  
18 (AMC), Building 634 (QAE), and Building 642 (T-COMBS). The existing facilities utilized for  
19 these functions are inadequate, with single pane windows, un-insulated concrete walls, failing  
20 roofs, and failing Heating, Ventilation, Air Conditioning (HVAC) systems. These facilities are  
21 greater than 50 years in age and were constructed in 1958 (Building 640) and 1959 (Buildings  
22 634 and 642). The purpose of this project is to consolidate these three functions into one new  
23 AMOC to continue mission activities. Consolidation of these functions is needed to reduce  
24 Columbus AFB's footprint and to assist in meeting Presidential Memorandum (*Memorandum –*  
25 *Disposing of Unneeded Federal Real Estate*, dated 10 June 2010) and Air Force initiative  
26 (*Sustainable Installations and Air Force 20/20 by 2020*) goals of a 20 percent reduction in real  
27 property and associated operating costs by the year 2020. Additionally, the project is needed to  
28 remove facilities from the Airfield Clear Zone (CZ) (Building 634) and facilities that no longer  
29 meet Anti-Terrorism (AT) requirements (Building 640).

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*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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### LIST OF ACRONYMS

---

1		
2	20/20 by 2020	Sustainable Installations and Air Force 20/20 by 2020
3		
4	ADP	Area Development Plan
5	AETC	Air Education and Training Command
6	AFB	Air Force Base
7	AFCEC	Air Force Civil Engineer Center
8	AFH	Air Force Handbook
9	AFI	Air Force Instruction
10	AFTO	Air Force Technical Orders
11	AHPA	Archaeological and Historic Preservation Act
12	AIRFA	American Indian Religious Freedom Act
13	AMC	Aircraft Maintenance Contractor
14	AMOC	Aircraft Maintenance Operations Center
15	ARPA	Archaeological Resources Protection Act
16	AT	Anti-Terrorism
17		
18	BMP	Best Management Practices
19		
20	CAA	Clean Air Act of 1970
21	CatEx	Categorical Exclusion
22	CEQ	Council on Environmental Quality
23	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
24		
25	CES/CEIE	Civil Engineer Squadron/Civil Engineer Installation Management- Environmental Element
26		
27	CFR	Code of Federal Regulations
28	CWA	Clean Water Act of 1972
29	CZ	Clear Zone
30		
31	DoD	Department of Defense
32	DoDI	DoD Instructions
33		
34	EA	Environmental Assessment
35	EIAP	Environmental Impact Analysis Process
36	EO	Executive Order
37	ESA	Endangered Species Act 1973
38		
39	ft	Feet
40	ft <sup>2</sup>	Square Feet
41	FONSI	Finding of No Significant Impact
42	FPPA	Farmland Protection Policy Act of 1981
43	FR	Federal Register
44	FTW	Flying Training Wing

## DRAFT

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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### LIST OF ACRONYMS

1	FWCA	Fish and Wildlife Coordination Act of 1980
2		
3	GHG	Greenhouse Gas
4		
5	HVAC	Heating, Ventilation, and Air Conditioning
6		
7	IICEP	Intergovernmental and Interagency Coordination for Environmental Planning
8		
9		
10	LEED	Leadership in Energy and Environmental Design
11		
12	MDEQ	Mississippi Department of Environmental Quality
13	MILCON	Military Construction
14	MPDES	Mississippi Pollutant Discharge Elimination System
15	MS	Mississippi
16		
17	NAGPRA	Native American Graves Protection and Repatriation Act 1990
18	NEPA	National Environmental Policy Act of 1969
19	NHPA	National Historic Preservation Act of 1966
20	NMFS	National Marine Fisheries Service
21	NOI	Notice of Intent
22		
23	OSHA	Occupation Safety and Health Act
24		
25	QAE	Quality Assurance Evaluators
26		
27	RCRA	Resource Conservation and Recovery Act of 1976
28		
29	SARA	Superfund Amendments and Reauthorization Act
30	square feet	Ft <sup>2</sup>
31	SWPPP	Stormwater Pollution Prevention Plan
32		
33	T-COMBS	T-38 Contractor Operated and Maintained Base Supply
34	TSCA	Toxic Substance Control Act
35	TWH	The White House
36		
37	UFC	Unified Facilities Criteria
38	USC	United States Code
39	UST	Underground Storage Tank

1 **CHAPTER 1: PURPOSE OF AND NEED FOR ACTION**

2 This chapter has six parts: a statement of the purpose of and need for action, a description of the  
3 location of the proposed and alternative actions, a description of the scope of the environmental  
4 review, identification of the decision to be made, identification of applicable regulatory  
5 requirements, and an introduction to the organization of the document.

6 **1.1 PURPOSE OF AND NEED FOR ACTION**

7 The purpose of the Proposed Action is to establish an Aircraft Maintenance Operations Center  
8 (AMOC) to continue maintaining the daily flight schedule, directing all activities for 219 aircraft  
9 with over 85,000 flying hours each year, and providing launch/recovery support for 60,000  
10 sorties each year. Additionally, the AMOC would serve as headquarters for Aircraft  
11 Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE), and T-38 Contractor  
12 Operated and Maintained Base Supply (T-COMBS) staff. These personnel are currently located  
13 within three separate underutilized facilities: Buildings 640 (AMC), Building 634 (QAE), and  
14 Building 642 (T-COMBS). The existing facilities utilized for these functions are inadequate,  
15 with single pane windows, un-insulated concrete walls; and failing roofs and heating, ventilation,  
16 and air conditioning (HVAC) systems. These facilities are greater than 50 years in age and were  
17 constructed in 1958 (Building 640) and 1959 (Buildings 634 and 642).

18 Consolidation of the three underutilized and aging facilities is needed in order to be in  
19 compliance with the *Presidential Memorandum – Disposing of Unneeded Federal Real Estate*,  
20 dated 10 June 2010 (TWH, 2010). The Presidential Memorandum charges all federal agencies  
21 with disposing of unneeded real estate, with a focus on utilizing installations more efficiently by  
22 optimizing facility-space use, reducing energy and water operating costs, and sustaining only  
23 those facilities needed to conduct the mission (USAF, 2011a). The *Sustainable Installations and*  
24 *Air Force 20/20 by 2020* (20/20 by 2020) memorandum signed by the Vice Chief of Staff on 14  
25 February 2011 is the Air Force’s initiative to comply with the Presidential Memorandum by  
26 placing an emphasis on reducing real property and associated operating costs by 20 percent by  
27 the year 2020. In order to accomplish this task, major air commands must consolidate operations  
28 into sustainable facilities and divest assets that are inefficient or excess to the needs of the Air  
29 Force (USAF, 2011b). One pillar of the *Sustainable Installations and Air Force 20/20 by 2020*  
30 initiative involves consolidating operations into the right-size facilities and demolishing those  
31 that fail to meet space utilization criteria outlined in Air Force Handbook (AFH) 32-1084  
32 (USAF, 2011a).

33 To meet this initiative, Columbus Air Force Base (AFB) has set a goal to reduce its facility  
34 footprint by approximately 290,000 square feet (ft<sup>2</sup>) by 2020 (an average of approximately  
35 20,700 ft<sup>2</sup> each year) by combining like functions and replacing deteriorating facilities. It is  
36 Columbus AFB’s intention to demolish as many facilities as possible prior to and in conjunction  
37 with other military construction (MILCON) projects (USAF, 2012). The consolidation of the  
38 functions of the AMC, QAEs, and T-COMBS into one Leadership in Energy and Environmental  
39 Design (LEED)-certified administrative facility would present a 7.5 percent (1,684 ft<sup>2</sup>) reduction  
40 in the footprint of the AMOC functions. The Proposed Action and consolidation of facilities

## DRAFT

### PURPOSE AND NEED FOR ACTION

1 would represent 0.6 percent of the overall Columbus AFB reduction goal to meet the 20/20 by  
2 2020 initiative.

3 In addition to needing to meet the Air Forces 20/20 by 2020 initiative, the new AMOC would  
4 also meet Anti-Terrorism (AT) requirements, Air Force Technical Orders (AFTO), Fire Safety  
5 Codes. Currently, Building 640 is neither in compliance with required AT/FP and AFTO  
6 setbacks off of Lockhart Street nor current Fire Safety Codes. The Proposed Action would  
7 maximize standoff distances, consolidate parking, close portions of Lockhart Street, and  
8 therefore reduce the amount of needed road setbacks.

9 Building 634 is currently located within the Columbus AFB Clear Zone (CZ). The CZ is  
10 comprised of areas identified at the ends of runways that possess a high potential for accidents,  
11 and therefore have restricted land-use. CZs are typically obstruction-free areas (with the  
12 exception of features essential for aircraft operations). Therefore, Columbus AFB is also striving  
13 to eliminate CZ conflicts by recapitalizing and reconstructing facilities outside of the CZ (USAF,  
14 2012). The Proposed Action would remove this facility from within the CZ and reduce  
15 Columbus AFB CZ conflicts.

### 16 1.2 LOCATION OF THE PROPOSED ACTION

17 Columbus AFB encompasses 4,919 acres located in rural Lowndes County, approximately ten  
18 miles north of downtown Columbus, Mississippi (Figure 1-1). The base also has an Auxiliary  
19 Field near Shuqualak, Mississippi. Subsection 2.4 describes the Proposed Action in detail, and  
20 Figure 2-1 show the proposed project location on Columbus AFB.

### 21 1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

22 The National Environmental Policy Act of 1969 (NEPA) review requires Federal agencies to  
23 consider environmental consequences during their decision-making process. The President's  
24 Council on Environmental Quality (CEQ) has issued regulations to implement NEPA that  
25 include provisions for both the content and procedural aspects of the required environmental  
26 impact analysis. The Air Force *Environmental Impact Analysis Process* (EIAP), as detailed in  
27 Air Force Instruction (AFI) 32-7061, is accomplished through adherence to the procedures set  
28 forth in CEQ regulations (40 Code of Federal Regulations [CFR] Sections 1500-1508),  
29 Department of Defense (DoD) Instruction 4715.9 *Environmental Planning and Analysis*, and 32  
30 CFR Part 989 (*Environmental Impact Analysis Process*), 15 July 1999, as amended. These  
31 Federal regulations establish both the administrative process and substantive scope of the  
32 environmental impact evaluation designed to ensure that deciding authorities have a proper  
33 understanding of the potential environmental consequences of a contemplated course of action.

34 This Environmental Assessment (EA) identifies, describes, and evaluates the potential  
35 environmental impacts associated with the demolition and construction projects proposed for the  
36 AMOC. The potential environmental effects of taking no action are also described. As  
37 appropriate, the affected environment and environmental consequences of the action are  
38 described in either terms of a regional overview or a site-specific description to adequately  
39 define the resource using the most current information as the baseline condition.

## DRAFT

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

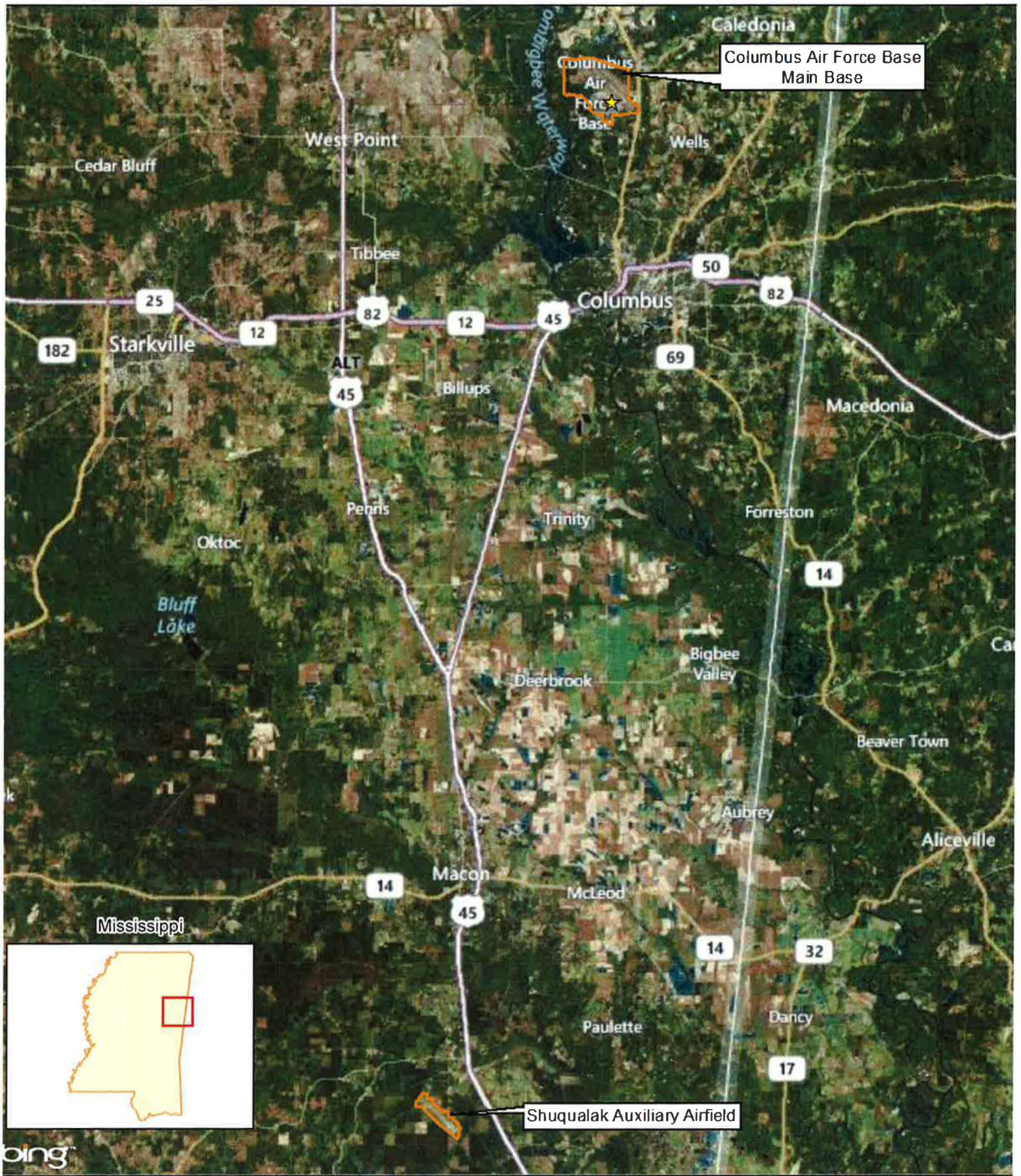
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### PURPOSE AND NEED FOR ACTION

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

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- Legend**
-  Columbus Air Force Base Boundary
  -  Project Area

0 3 6 12 Miles



Imagery: ESRI, Bing Mapping Service

**Figure 1-1**  
**Site Vicinity Map**  
**Columbus Air Force Base**  
**Columbus, MS**



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**PURPOSE AND NEED FOR ACTION**

1 Through Intergovernmental and Interagency Coordination for Environmental Planning (IICEP),  
2 requests have been made for information on planned actions in the surrounding community. If  
3 any concurrent actions are identified during the EA process, they will be examined only in the  
4 context of potential cumulative impacts. A cumulative impact, as defined by the CEQ (40 CFR  
5 1508.7), is the “impact on the environment which results from the incremental impact of the  
6 action when added to other past, present, and reasonably foreseeable future actions regardless of  
7 which agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts  
8 can result from individually minor but collectively significant actions taking place over a period  
9 of time.”

10 **1.3.1 Resource Areas Addressed in Detail**

11 Resource areas that could be affected by the Proposed Action or No-action Alternative have been  
12 selected to allow for a comprehensive analysis of potential impacts. The intent of this EA is to  
13 meet the NEPA requirements established in 32 CFR Part 989. The following resource areas are  
14 discussed in detail in the EA:

- |    |                        |    |   |
|----|------------------------|----|---|
| 15 | ▪ Air Quality          | 22 | ▪ Hazardous Materials and Wastes          |
| 16 | ▪ Noise                | 23 | ▪ Utilities and Infrastructure, including |
| 17 | ▪ Land Use             | 24 | Transportation                            |
| 18 | ▪ Natural Resources    | 25 | ▪ Ground Safety                           |
| 19 | ▪ Biological Resources | 26 | ▪ Socioeconomic Resources                 |
| 20 | ▪ Cultural Resources   | 27 | ▪ Environmental Justice                   |
| 21 | ▪ Water Resources      |    |   |

28 **1.3.2 Resource Topics Eliminated from Detailed Analysis**

29 Resource areas that have been eliminated from further detailed study and the rationales for  
30 eliminating them are presented below:

- 31     ▪ Aircraft Operations. The Proposed Action is not anticipated to change the number of  
32 active aircraft assigned to Columbus AFB, airfield facilities, or Columbus AFB runways.  
33 Therefore, aircraft operations would not be affected by the proposed or alternative  
34 actions.
- 35     ▪ Airspace Use and Management. The Proposed Action is not anticipated to have a  
36 significant change in the airspace associated with aircraft operations. Therefore, airspace  
37 compliance with laws, Executive Orders (EOs), and DOD instructions would not be  
38 affected by the proposed or alternative actions.

39 **1.4 DECISION TO BE MADE**

40 This analysis evaluates the potential environmental consequences from the demolition of three  
41 facilities and the construction of the AMOC on Columbus AFB. Based on this analysis,  
42 Columbus AFB will determine whether to allow implementation of the Proposed Action or take

## DRAFT

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

### PURPOSE AND NEED FOR ACTION

1 no action (“No-action Alternative”). If it is determined, through this analysis, to proceed with  
2 the Proposed Action, Columbus AFB also must decide to accept the placement of this project  
3 near the flightline. As required by NEPA and its implementing regulations, preparation of an  
4 environmental document must precede final decisions regarding the proposed project, and must  
5 be available to inform decision-makers of the potential environmental impacts of selecting the  
6 Proposed Action or the No-action Alternative.

## 7 **1.5 APPLICABLE REGULATORY REQUIREMENTS**

8 This EA is part of the EIAP for the proposed project and was prepared in compliance with NEPA  
9 regulations. The following paragraphs describe the laws and regulations that apply or may apply  
10 to the proposed and alternative actions.

### 11 **1.5.1 Interagency and Intergovernmental Coordination**

12 Federal, state, and local agencies with jurisdiction that could be affected by the proposed or  
13 alternative actions have been notified and consulted. A complete listing of the agencies  
14 consulted may be found in Chapter 6 and IICEP correspondence and responses are included in  
15 Appendix A. This coordination fulfills the Interagency Coordination Act and EO 12372  
16 *Intergovernmental Review of Federal Programs* (14 July 1982), which requires Federal agencies  
17 to cooperate with and consider state and local views in implementing a Federal proposal. EO  
18 12372 is implemented by the Air Force in accordance with AFI 32-7060, *Interagency and*  
19 *Intergovernmental Coordination for Environmental Planning*.

### 20 **1.5.2 Permits**

21 Applicable permits from local, state, and Federal agencies will be identified and obtained prior to  
22 construction or demolition activities associated with the Proposed Action. The construction  
23 contractor will identify and obtain appropriate permits for construction and demolition activities.  
24 All underground utility locations would need to be identified prior to any construction activities.

25 The Proposed Action would require filing a Notice of Intent (NOI) for Stormwater Discharges  
26 under the Mississippi Pollutant Discharge Elimination System (MPDES) permit. This action  
27 would also include the development and implementation of a Stormwater Pollution Prevention  
28 Plan (SWPPP) prior to construction activities.

29 During the impacts analysis process, other permits determined to be necessary will be added  
30 upon identification. All applicable or potential permits are also discussed in more detail in the  
31 appropriate subsections of Chapters 3 and 4 of this document.

### 32 **1.5.3 Other Regulatory Requirements**

33 This EA considers all applicable local, state, and Federal laws and regulations. Applicable laws,  
34 regulations, and guidances identified for the Proposed Action have been identified and are  
35 provided in Table 1-1. These regulations, laws, and guidances are more fully described and  
36 discussed in the appropriate subsections of Chapters 3 and 4 of this document.

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1  
2

**Table 1-1  
Applicable Environmental Laws and Regulations**

<b>Federal Statutes and Policies</b>
American Indian Religious Freedom Act (AIRFA), 42 United States Code (USC) 1996
Archaeological and Historic Preservation Act (AHPA), 1974, as amended, 16 USC 469, et. seq.
Archaeological Resources Protection Act (ARPA), 16 USC 470 aa-mm
Clean Air Act (CAA), 1970, as amended, 42. USC 7609, et. seq.
Clean Water Act (CWA), 1972, as amended, 33 USC 1251, et. seq., Sections 401 and 404
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9610
Endangered Species Act (ESA), 1973, as amended, 16 USC 1531, et. seq.
Energy Independence and Security Act of 2007 P.L. 110-140
Emergency Planning and Community Right-to-Know Act, 42 USC 11000, et seq.
Farmland Protection Policy Act (FPPA), 1981, 7 USC 4201, et. seq.
Fish and Wildlife Coordination Act (FWCA), 1980, as amended, 16 USC 661, et. seq.
Land and Water Conservation Fund Act, 1965, as amended, 16 USC 4601, et. seq.
Magnuson-Stevens Act Fishery Conservation and Management Act, 1996, as amended. National Marine Fisheries Service (NMFS)
National Historic Preservation Act (NHPA), 1966, as amended, 16 USC 470a, et. seq.
National Environmental Policy Act (NEPA), 1969, as amended, 42 USC 4321, et. seq.
Native American Graves Protection and Repatriation Act (NAGPRA), 1990, 25 USC 3001-13, et. seq.
Occupation Safety and Health Act (OSHA), 29 USC 651 et. seq.
Prevention of Significant Deterioration and Title V Greenhouse Gas (GHG) Tailoring Rule; Final Rule, 3 June 2010, 75 Federal Register (FR) 31514-01 and 40 CFR 51,52,70, et. al.
Pollution Prevention Act, 1990, 42 USC 6901 et. seq.
Protection of Historic Properties, 36 CFR Part 800
Resource Conservation and Recovery Act (RCRA), 1976, 42 USC 6901 et. seq.
Rivers and Harbors Act of 1899, 33 USC 403, Section 10
Superfund Amendments and Reauthorization Act (SARA), 42 USC 9601 et. seq.
Toxic Substance Control Act (TSCA), 15 USC 2601 et. seq.
Watershed Protection and Flood Prevention Act, 1954, 16 USC 1001, et. seq.
Wild and Scenic Rivers Act, 1968, as amended, 16 USC 1271, et. seq.
<b>State Regulations</b>
Mississippi Department of Environmental Quality (MDEQ), Mississippi Pollutant Discharge Elimination System (MPDES).
<b>Executive Orders (EO)</b>
Floodplain Management (EO 11988), 1977
Protection of Wetlands (EO 11990), 1977
Environmental Justice (EO 12898), 1994
<b>Executive Orders (EO)</b>
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423), 2007
Federal Facilities on Historic Properties (EO 13006), 1996

## DRAFT

Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

### PURPOSE AND NEED FOR ACTION

EO 12580, Superfund Implementation (EO 12580), 1987
Accommodation of Native American Sacred Sites (EO 13007), 1996
Migratory Bird Treaty Act, 16 USC 703-711, et. seq. (EO 13186), 2001
Protection of Children from Environmental Health Risks and Safety Risks (EO 13045), 1997
Intergovernmental Review of Federal Programs (EO 12372), 2009
<b>Department of Defense (DOD) Regulations</b>
DOD Instructions, Environmental Planning and Analysis (DoDI 4715.9), 3 May 1996
DOD Instructions, Cultural Resources Management (DoDI 4715.16), 18 September 2008
DoD Minimum Anti-Terrorism Standards for Buildings, Unified Facilities Criteria (UFC), UFC 4-010-01, 9 February 2012
Air Force Instructions, Disposal of Real Property (AFI 32-9004), 21 July 1994

## 1 1.6 INTRODUCTION TO THE ORGANIZATION OF THE DOCUMENT

2 This EA is organized into seven chapters.

3 *Chapter 1* Contains a statement of the purpose of and need for action, the location of the  
4 proposed action, a summary of the scope of the environmental review,  
5 identification of the decision to be made, identification of applicable regulatory  
6 requirements, and a description of the organization of the document.

7 *Chapter 2* Describes the history of the formulation of alternatives, identifies site selection  
8 standards for alternatives, identifies alternatives eliminated from further  
9 consideration, provides a detailed description of the Proposed Action, describes  
10 the No-action Alternative, summarizes other actions announced for the project  
11 sites and the surrounding community, provides a comparison matrix of  
12 environmental effects for all alternatives, identifies the preferred alternative, and  
13 describes measures to minimize or reduce impacts.

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

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

18 *Chapter 5* Lists preparers of this document.

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

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

1 **CHAPTER 2: DESCRIPTION OF THE PROPOSED ACTION AND**  
2 **ALTERNATIVES**

3 This chapter has eight parts: a brief history of the formulation of alternatives, identification of  
4 selection standards for the alternatives, identification of alternatives eliminated from further  
5 consideration, a description of the Proposed Action, a description of the No-action Alternative,  
6 identification of other actions planned for the communities surrounding the proposed project site,  
7 a summary of environmental impacts of all alternatives, identification of the preferred  
8 alternative, and a table of measures to minimize impacts.

9 **2.1 HISTORY OF THE FORMULATION OF ALTERNATIVES**

10 The formulation of alternatives for the Proposed Action was based on current mission related  
11 needs of the AMC, QAE, and T-COMBS staff currently residing in Buildings 634, 640, and 642.  
12 The existing facilities do not meet the required AFTO, Fire Safety Codes, or AT requirements,  
13 and were identified by Columbus AFB as risks that the base does not want to continue to fund or  
14 maintain. Therefore, Buildings 634, 640, and 642 were included on Columbus AFB's  
15 Consolidated Demolition List (USAF, 2013).

16 Following the publication of the 2010 Presidential Memorandum, Columbus AFB held a  
17 planning charrette on 16 July 2010, with the Air Force Civil Engineer Center (AFCEC), and  
18 Jacobs Engineering to review FY 2011 requirements for the AMC, QAE, and T-COMBS  
19 functions. The findings of the charrette were summarized in the Requirements Document for the  
20 AMOC (USAF, 2010). The Requirements Document found that a joint facility could provide  
21 adequate space for each group to perform their three separate missions successfully, while  
22 meeting AFTO, Fire Safety Code, and AT requirements. Following the charrette and the  
23 issuance of the Air Force's 20/20 by 2020 Plan, a Form 813, Request for Environmental Impact  
24 Analysis, was completed for the project on 17 May 2011 and is included in Appendix B.

25 The initial charrette and Form 813 included the demolition of Building 630 (18,450 ft<sup>2</sup>, which  
26 was used by AMC staff) to be relocated into a larger AMOC (22,605 ft<sup>2</sup>). However, since the  
27 2010 charrette and completion of the Form 813, Columbus AFB determined that the AMC  
28 functions located in Building 630 could be permanently relocated to Building 218, with minor  
29 renovations. On 16 November 2011, 14 Civil Engineering Squadron/Civil Engineering  
30 Installation Element (CES/CEIE) completed a Categorical Exclusion (CatEx) for the demolition  
31 of Building 360 and the relocation of its functions to Building 218. Therefore, the demolition  
32 and relocation of Building 630 was removed from the AMOC project and are not part of the  
33 Proposed Action.

34 **2.2 SELECTION STANDARDS FOR ALTERNATIVES**

35 To support the mission needs of AMC, QAE, and T-COMBS, and to meet the appropriate Air  
36 Force initiative and requirements, the proposed administrative facility must:

- 37
- Contribute to an overall reduction of footprint, in order to meet the 20/20 by 2020 plan.



**DRAFT**

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

- 1       ▪ Be located outside of the Airfield CZ.
- 2       ▪ Be located to allow efficient application of force protection measures and comply with
- 3       AFTO, Fire Safety Codes, and AT requirements.
- 4       ▪ Be located in an area that would not impact mission critical facilities or operations.
- 5       ▪ Locate the AMC, QAE, and T-COMBS functions in close proximity to each other, to the
- 6       flight line, and to associated utilities.
- 7       ▪ Be compatible with surrounding land use and not create undesirable land use interactions.
- 8       ▪ Meet Unified Facilities Criteria (UFC), specifically UFC 3-101-01 for architecture.
- 9       ▪ Be able to accommodate a facility that is sized to include all required components as
- 10      outlined in *Air Force Handbook* (AFH) 32-1084, including required parking.
- 11      ▪ Be an efficient facility of sound construction so that it does not meet characteristics of
- 12      facilities identified under AFI 32-9004, Disposal of Real Property (e.g., deterioration
- 13      beyond the point of economical repair; interferes with a site approved for construction;
- 14      dangerous to people, likely to damage adjoining structures, or creates a nuisance; requires
- 15      more than normal maintenance and its disposal will not create a deficiency; or design is
- 16      obsolete and it cannot be reasonably altered or economically used).
- 17      ▪ Meet LEED silver certification requirements.
- 18      ▪ Have necessary temporary workspace to be used during project construction for existing
- 19      administrative functions.
- 20      ▪ Have a facility exterior constructed to support the Columbus AFB “Showcase of the
- 21      South” goals detailed in the 2040 Plan (USAF, 2012).

22 A range of alternatives were considered; however, based upon project requirements, some  
23 alternatives were eliminated from further consideration. These alternatives are discussed in more  
24 detail in Subsection 2.3. The alternative identified as the Proposed Action is described in  
25 Subsection 2.4, and impacts anticipated from implementation of the Proposed Action are  
26 described in Chapter 4.

27 **2.3 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION**

28 Several potential alternatives were eliminated from further consideration as they would not fully  
29 meet Columbus AFB mission requirements. These previously eliminated alternatives included  
30 utilization of alternative facilities and the renovation of existing facilities, as detailed below.

31 Alternatives on the Columbus AFB flightline were considered for the consolidated AMOC;  
32 however, these alternatives would cost more to complete. Initially, Columbus AFB considered  
33 moving the functions currently located in Buildings 634, 640, and 642 into existing facilities on  
34 the base flightline. However, these functions could not be co-located within any one facility as  
35 there was no other location on base that could accommodate the 20,938 ft<sup>2</sup> required for the  
36 consolidated functions. Therefore these functions would need to be located in separate facilities  
37 and not within close proximity to one another. Since the activities would not be located in one



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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

1 space, the Columbus AFB mission could be affected with delays or even stoppages that would  
2 congest the flightline and impact mission capable rates for training personnel. Additionally,  
3 these alternatives were determined to not be compatible with the surrounding area as existing  
4 facilities would also need to be demolished, relocating several existing tenants. Due to the lack  
5 of adequate space and potential disruptions to base activities, no specific facilities were assessed  
6 in greater detail by Columbus AFB for the potential relocation of Buildings 634, 640, and 642.

7 In lieu of constructing a new AMOC, Columbus AFB also considered renovating the existing  
8 Building 640. However, this was not a feasible option as Building 640 is not only in non-  
9 compliance with AT setback requirements, but also over 4,000 ft<sup>2</sup> smaller than the required  
10 20,938 ft<sup>2</sup> for the consolidated functions. Therefore, a renovated Building 640 would not adhere  
11 to guidelines presented in the AFH 32-1084. Also, Building 640 has been identified as a risk the  
12 base does not want to continue to fund or maintain and, therefore, has been included on  
13 Columbus AFB’s Consolidated Demolition List (USAF, 2013).

**2.4 PROPOSED ACTION**

15 The AMOC project, as described in the Flight Line Area Development Plan and depicted in  
16 Figure 2-1, is primarily comprised of two components: the demolition of three facilities and the  
17 construction of one consolidated administrative facility. The proposed demolition of Buildings  
18 634, 640, and 642 and construction of the consolidated administrative facility would present a  
19 1,684 ft<sup>2</sup> footprint reduction, which would contribute to the 20/20 by 2020 plan.

**2.4.1 Demolition**

21 Under the first phase of the Proposed Action, Buildings 634, 640, and 642 (detailed in Table 2-1,  
22 below) would be demolished. The existing facilities do not meet the required AFTO, Fire Safety  
23 Codes, or AT requirements, and have been identified as a risk the base does not want to continue  
24 to fund or maintain and therefore, have been included on Columbus AFB’s Consolidated  
25 Demolition List (USAF, 2013). Additionally, Building 634 is located within the CZ. All  
26 functions would be temporarily relocated to trailers located on the site of the previously  
27 demolished Building 630 prior to any demolition activities. To also accommodate AT  
28 requirements, a portion of Lockhart Street would also be removed.

**Table 2-1  
Proposed Facility Demolition**







<b>Building Number</b>	<b>Building User</b>	<b>Year Constructed</b>	<b>Approximate Size (ft<sup>2</sup>)</b>
634	Air Force Quality Assurance Evaluators (QAE)	1959	3,840
640	Aircraft Maintenance Contractors (AMC)	1958	16,362
642	T-38 COMBS (T-COMBS)	1959	2,420
<b>BUILDING SUBTOTAL</b>			<b>22,622</b>
--	Lockhart Street from Imes Street to C Place	--	9,250
<b>PROJECT TOTAL</b>			<b>31,872</b>

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**Legend**

-  Proposed Construction
-  Proposed Site of Temporary Trailers
-  Facilities to be Demolished
-  Buildings
-  Accident Potential Zone I
-  Clear Zone

Note: Building 630 has already been demolished

0 100 200 Feet




Imagery: ESRI, Bing Mapping Service

**Figure 2-1**  
**Proposed Action**  
**Columbus Air Force Base**  
**Columbus, MS**

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

**2.4.2 Construction**

The second phase of the AMOC project would involve consolidating the functions of those buildings demolished during the first phase into a single new administrative facility to support all functions as detailed in Table 2-2. The construction of the new AMOC would be located near Columbus AFB’s existing flightline, just outside of the CZ in the footprint of the former Building 640. The building would be a single story and would not interfere with imaginary surface clearances from the airfield. The new AMOC would be a LEED Silver-certified facility.

**Table 2-2  
Proposed Building Construction**

<b>Building User</b>	<b>Approximate Size (ft<sup>2</sup>)</b>
Air Force Quality Assurance Evaluators (QAE)	9,985
Aircraft Maintenance Contractors (AMC)	4,078
T-38 COMBS (T-COMBS)	6,875
<b>TOTAL</b>	<b>20,938</b>

**2.5 DESCRIPTION OF THE PRIMARY ALTERNATIVE**

The Primary Alternative assessed in this EA is the No-action Alternative. The No-action Alternative would involve the continued use of the existing facilities, including Buildings 634, 640, and 642. Activities would continue to be located within underutilized and aging facilities which were not originally designed for the functions for which they are currently being used. The new AMOC would not be constructed; therefore, the AMC, QAE, and T-COMBS would not be consolidated into one new energy efficient facility. Additionally, Columbus AFB would not accomplish the footprint reduction achieved from the Proposed Action, and would be no closer to achieving a 20 percent reduction by the year 2020.

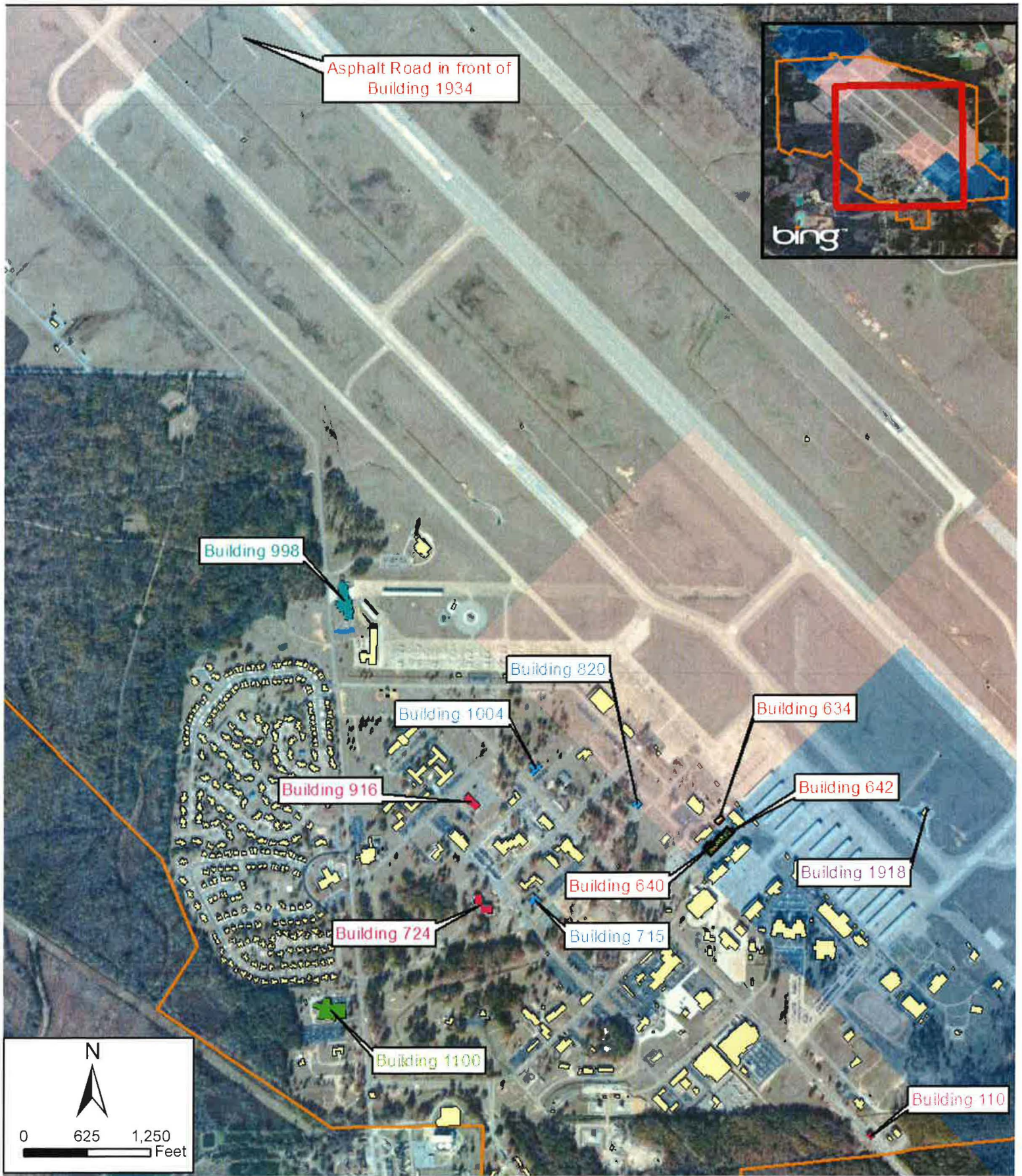
**2.6 OTHER ACTIONS ANNOUNCED FOR THE PROJECT AREAS AND SURROUNDING COMMUNITY**

This EA also considers the direct and indirect effects of cumulative impacts (40 CFR 1508.7) and concurrent actions (40 CFR 1508.25[1]). 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.”

The Proposed Action is a component of the Flightline Area Development Plan (ADP). The Flightline ADP is one of six ADPs (Operations Trainings Campus ADP, Administrative ADP, Community ADP, Industrial ADP, and Capability Expansion ADP) that together make up the 2040 Plan for Columbus AFB to identify the long-term goals of the Base (USAF, 2012). Other

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- Legend**
- Buildings
  - Columbus Air Force Base Boundary
  - Accident Potential Zone I Clear Zone
  - Proposed Drafting Pit
  - Proposed Smoking Shelter
  - Proposed Road Repair
  - Proposed Fillstand Direct Feed System Project
  - Proposed Buildings where Functions will be Relocated
  - Proposed Buildings for Demolition
  - Proposed Action Construction
  - Proposed Action Demolition

Note: Building 630 has already been demolished  
 Imagery: ESRI, Bing Mapping Service

**Figure 2-2**

**Other Actions Announced for the Project Area**

**Columbus Air Force Base  
 Columbus, MS**

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Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

1 actions announced for Columbus AFB and the surrounding area that could occur during the same  
2 time period as the proposed or alternative actions are depicted in Figure 2-2 and described below.

- 3     ▪ **Installation of a Fillstand Direct Feed System and Demolition of Underground**  
4     **Storage Tanks and Flightline Pump Shelter (Building 1918):** This project would  
5     include the installation of new transfer pumps at bulk storage and modifications at the  
6     fillstand location. This project will eliminate the requirement and costs associated with  
7     maintaining an operable Type II hydrant system; underground storage tanks (USTs),  
8     pumphouse and its components. Upon successful commissioning of a new direct feed  
9     pumping system, the pumphouse, control room, USTs and hydrant system will no longer  
10    be required and shall be removed. Demolition would consist of eight 50,000 gallon  
11    USTs, the flightline pump shelter, control room, and equipment, in order to eliminate  
12    environmental non-compliances, inspections, and maintenance costs associated with the  
13    existing hydrant system, USTs, and pumphouse. This project received a CatEx based on  
14    the EA and Finding of No Significant Impact (FONSI) *Construct Spill Containment at*  
15    *Pumphouse 1*, which was signed and dated 17 March 2003.
  
- 16    ▪ **Relocation and Demolition of the Photo Lab:** As a part of the Flight Line ADP and  
17    included on the Columbus AFB five year disposal plan (USAF, 2013), Building 820  
18    would be demolished and relocated to Building 724 in May 2014. Total demolition of  
19    Building 820 would consist of 4,958 ft<sup>2</sup>. Due to scope of the project, it is anticipated that  
20    this project will qualify for a CatEx A2.3.11, based on the EA and FONSI issued for the  
21    Strategic Air Command (SAC) Alert Facility, signed and dated 15 May 2008.
  
- 22    ▪ **Relocation and Demolition of the Dental Clinic:** As a part of the Flight Line ADP and  
23    included on the Columbus AFB five year disposal plan (USAF, 2013), the Dental Clinic  
24    would be relocated to Building 1100 and the existing facility (Building 1004) will be  
25    demolished in March 2015. Total demolition of Building 1004 would consist of 5,824  
26    ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx  
27    A2.3.11, based on the EA and FONSI issued for the SAC Alert Facility, signed and dated  
28    15 May 2008.
  
- 29    ▪ **Relocation and Demolition of the Library:** As a part of the Flight Line ADP and  
30    included on the Columbus AFB five year disposal plan (USAF, 2013), the Library would  
31    be relocated to Building 926 and the existing facility (Building 715) would be  
32    demolished in May 2015. Total demolition of Building 715 would consist of 7,831 ft<sup>2</sup>.  
33    Due to scope of the project, it is anticipated that this project will qualify for a CatEx  
34    A2.3.11, based on the EA and FONSI issued for the SAC Alert Facility, signed and dated  
35    15 May 2008.
  
- 36    ▪ **Relocation and Demolition of the Education Center:** As a part of the Flight Line ADP  
37    and included on the Columbus AFB five year disposal plan (USAF, 2013), the Education  
38    Center would be relocated to Building 926 and the existing facility (Building 916) would  
39    be demolished in May 2015. Total demolition of Building 916 would consist of 11,340  
40    ft<sup>2</sup>. Due to scope of the project, it is anticipated that this project will qualify for a CatEx

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**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

1 A2.3.11, based on the EA and FONSI issued for the SAC Alert Facility, signed and dated  
2 15 May 2008.

3 ■ **Road Repair:** The existing asphalt road accessing Building 1934 would be repaired in  
4 June 2014. It is anticipated that this project would qualify for a CatEx A2.3.10, due to  
5 the size and scope of the project impacts.

6 ■ **Construct Smoking Shelter:** A 12 ft by 14 ft smoking shelter would be constructed  
7 adjacent to the Medical Clinic (Building 1100) during 2014. It is anticipated that this  
8 project would qualify for a CatEx A2.3.11, due to the size and scope of the project  
9 impacts.

10 ■ **Construction of a Drafting Pit:** A 40 ft by 60 ft concrete drafting pit will be constructed  
11 in June 2015 adjacent to the Fire Department (Building 998). Construction would also  
12 include the installation of a sump pump. It is anticipated that this project would qualify  
13 for a CatEx A2.3.10, due to the size and scope of the project impacts.

14 ■ **Routine Road Maintenance:** Routine road maintenance to include mill and overlay is  
15 planned to occur throughout the base as necessary throughout 2014. It is anticipated that  
16 this project would qualify for a CatEx A2.3.10, due to the size and scope of the project  
17 impacts.

18 For this analysis, the actions identified above are addressed from a cumulative perspective and  
19 are analyzed in Chapter 4. Given that the actions above would be funded separately from the  
20 Proposed Action and implementation would not be dependent upon another, the actions would  
21 not be incorporated into the baseline. All of the actions identified above have been, or will be  
22 evaluated under separate NEPA cover and were incorporated in this analysis for their potential  
23 cumulative effect.

24 **2.7 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES**

25 Table 2-3 summarizes the impacts of the Proposed Action and the No-action Alternative. This  
26 table provides a comparison of the effects of the alternatives to assist in the decision-making  
27 process.

28 **Table 2-3**  
29 **Summary of Environmental Impacts**

Resource	Proposed Action	No-action Alternative
Air Quality		
Noise		
Land Use		
Natural Resources	<i>Table to be completed once the remaining sections of the Draft EA have been prepared.</i>	
Water Resources		
Biological Resources		
Cultural Resources		

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Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

<b>Resource</b>	<b>Proposed Action</b>	<b>No-action Alternative</b>
Hazardous Materials and Waste	<i>Table to be completed once the remaining sections of the Draft EA have been prepared.</i>	
Utilities and Infrastructure		
Socioeconomic Resources		
Ground Safety		
Environmental Justice		

**2.8 IDENTIFICATION OF THE PREFERRED ALTERNATIVE**

The Air Force has evaluated each alternative to identify which one best complies with the mission, meets the operational goals of Columbus AFB, and accomplishes the purpose and need of the action. By demolishing Buildings 634, 640, and 642, and then constructing the new AMOC, the Proposed Action would provide an approximate 7.5 percent reduction of footprint by AMOC functions, assisting the Air Force in achieving the 20/20 by 2020 plan. Additionally, the new facility would meet the required AFTO, Fire Safety Codes, and AT requirements, and would help eliminate CZ conflicts by removing Building 634. Subsection 2.3 of this EA describes other alternatives eliminated from further consideration. The No-action Alternative does not meet the purpose and need of the action. Therefore, the preferred alternative is the Proposed Action.

**2.9 MEASURES TO MINIMIZE IMPACTS**

Analysis of environmental impacts has determined that some mitigation measures would be necessary to prevent significant adverse effects. Additionally, Best Management Practices (BMPs) are proposed to help minimize impacts. Table 2-4 presents a summary of these mitigation measures and BMPs proposed under the Proposed Action and the No-action Alternative.

**Table 2-4  
Summary of Measures to Minimize Impacts**

<b>Resource</b>	<b>Measures to Minimize or Reduce Impacts and BMPs</b>
Air Quality	
Noise	
Land Use	
Natural Resources	
Water Resources	
Biological Resources	
Cultural Resources	
Hazardous Materials and Waste	<i>Table to be completed once the remaining sections of the Draft EA have been prepared.</i>
Utilities and Infrastructure	
Socioeconomic Resources	
Ground Safety	
Environmental Justice	

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Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi

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### 1 **CHAPTER 3: AFFECTED ENVIRONMENT**

2 *Remainder of the Draft EA to be completed following IICEP scoping review.*

### 3 **CHAPTER 4: ENVIRONMENTAL CONSEQUENCES**

4 *Remainder of the Draft EA to be completed following IICEP scoping review.*

### 5 **CHAPTER 5: LIST OF PREPARERS**

6 *Remainder of the Draft EA to be completed following IICEP scoping review.*

### 7 **CHAPTER 6: PERSONS AND AGENCIES CONSULTED**

8 *Remainder of the Draft EA to be completed following IICEP scoping review.*

### 9 **CHAPTER 7: REFERENCES**

10 TWH (The White House). 2010. Presidential Memorandum – Disposing of Unneeded Federal  
11 Real Estate. President Barack Obama. Released by the Office of the Press Secretary on  
12 10 June 2010. Accessed [Online]: [http://www.whitehouse.gov/the-press-](http://www.whitehouse.gov/the-press-office/presidential-memorandum-disposing-unneeded-federal-real-estate)  
13 [office/presidential-memorandum-disposing-unneeded-federal-real-estate](http://www.whitehouse.gov/the-press-office/presidential-memorandum-disposing-unneeded-federal-real-estate). Reviewed: 23  
14 July 2013.

15 USAF (United States Air Force). 2010. Requirements Document: Aircraft Maintenance  
16 Administration Facility. Columbus Air Force Base, Mississippi. Prepared by Jacobs  
17 Engineering for Air Education and Training Command (AETC). 2010.

18 USAF. 2011a. United States Air Force Memorandum for ALMAJCOM-FOA-DRU/CC from HQ  
19 USAF/CF; Subject: Sustainable Installations and Air Force 20/20 by 2020. General Philip  
20 M. Breedlove. 14 February 2011.

21 USAF. 2011b. United States Air Force Memorandum for ALL MAJCOM/A7S from HQ  
22 USAF/A7C; Subject: Excess Infrastructure Guidance. Maj. General Timothy A. Byers.  
23 29 September 2011.

24 USAF. 2012. Columbus Air Force Base General Plan.

25 USAF. 2013. Columbus Air Force Base 5 Year Disposal Plan. 14 CES/CEAO. 07 March 2013.

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*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **Scoping II CEP Responses**

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*Environmental Assessment - Aircraft Maintenance Operations Center  
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# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Mississippi Field Office  
6578 Dogwood View Parkway, Suite A  
Jackson, Mississippi 39213

October 23, 2013

Mr. Shane Reed  
Chief, Installation Management Flight  
Department of the Air Force  
Headquarters 14<sup>th</sup> Flying Training Wing  
Columbus Air Force Base, Mississippi

Dear Mr. Reed:

The Fish and Wildlife Service (Service) has reviewed the environmental assessment dated October 21, 2013, for a proposed construction project on the Columbus Air Force Base (CAFB), Lowndes County, Mississippi. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), and the Endangered Species Act (ESA)(16 U.S.C. 1531 et seq.).

The 14<sup>th</sup> Flying Training Wing is proposing the demolition of three existing buildings (#634, #640, #642) and the construction of a replacement facility to house the Aircraft Maintenance Contractors, Quality Assurance Evaluators, and the T-38 Contractor Operated and Maintained Base Supply staff. After 55 years of use, the existing facilities have significantly deteriorated, and become inadequate and unsafe. Also, one of the buildings is located in the CAFB Clear Zone which is required to be an obstruction-free area. The proposed construction of a single structure will improve staff working environments and efficiency, as well as decrease the footprint of the CAFB.

Our records indicate that there are no federally protected species or their habitats within the project vicinity. Based on this information and the information provided in the environmental assessment, the Service concurs with your determination that the construction projects will not adversely affect any federally listed species or Critical Habitats. However, if the proposed plan is modified or additional actions are identified, obligations under Section 7 of the ESA must be reconsidered.

The Service welcomes the opportunity to work with the military in the development and implementation of its mission on CAFB. If you need additional information, please contact our office, telephone: (601) 218-4298.

Sincerely,

A handwritten signature in blue ink that reads "Kathy W. Linceford". The signature is written in a cursive style with a large initial 'K'.

*for* Stephen M. Ricks  
Field Supervisor

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*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **DEA HCEP Letters**

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*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI**

1 March 2014

Frank Lockhart, REM  
14 CES/CEIE  
555 Simler Blvd, Suite 108  
Columbus AFB, MS 39710-6010

Ms. Kathy W. Lunceford  
U.S. Fish and Wildlife Service  
Mississippi Field Office  
Starkville, MS 39759

**SUBJECT:** Aircraft Maintenance Operations Center Environmental Assessment at Columbus Air Force Base, Mississippi

Dear Ms. Lunceford

The 14th Flying Training Wing (FTW) at Columbus Air Force Base (AFB), Mississippi is preparing an Environmental Assessment (EA) addressing potential environmental impacts from the proposed demolition of three facilities and the construction of one consolidated Aircraft Maintenance Operations Center (AMOC). The environmental impact analysis process for this EA is being conducted by the Air Force Civil Engineer Center (AFCEC) and the 14th FTW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation in the NEPA process by providing comments on the Proposed Action and any potential environmental consequences that might concern you. The Proposed Action has not changed since your response, dated 23 October 2013, to the initial 1 October 2013 scoping request. The Draft EA is attached for your review. Please provide written comments or information at your earliest convenience but no later than 30 days from the date of this letter. When complete, a copy of proposed Finding of No Significant Impact (FONSI), if applicable, will also be made available for your review.

Please address your questions or comments on the DOPAA by mail to Mr. Frank Lockhart, 14 CES/CEIE, 555 Simler Blvd, Suite 108, Columbus AFB, Mississippi 39710-6010.

Sincerely,

A handwritten signature in black ink that reads "Frank Lockhart".

Frank Lockhart, REM  
Chief, Environmental Element, Acting

Attachments: Draft EA



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI**

1 March 2014

Frank Lockhart, REM  
14 CES/CEIE  
555 Simler Blvd, Suite 108  
Columbus AFB, MS 39710-6010

Ms. Mildred Tharpe  
State Clearinghouse for Federal Programs  
1301 Woolfolk Building, Suite E  
501 North West Street  
Jackson, MS 39213

**SUBJECT:** Aircraft Maintenance Operations Center Environmental Assessment at Columbus Air Force Base, Mississippi

Dear Ms. Tharpe

The 14th Flying Training Wing (FTW) at Columbus Air Force Base (AFB), Mississippi is preparing an Environmental Assessment (EA) addressing potential environmental impacts from the proposed demolition of three facilities and the construction of one consolidated Aircraft Maintenance Operations Center (AMOC). The environmental impact analysis process for this EA is being conducted by the Air Force Civil Engineer Center (AFCEC) and the 14th FTW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

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Frank Lockhart, REM  
Chief, Environmental Element, Acting

Attachments: Draft EA

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **Public Notice**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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## **PUBLIC NOTICE**

### **NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL ASSESSMENT AND PROPOSED FINDING OF NO SIGNIFICANT IMPACT FOR THE AIRCRAFT MAINTENANCE OPERATIONS CENTER COLUMBUS AIR FORCE BASE (AFB), MISSISSIPPI**

An Environmental Assessment (EA) has been prepared to analyze the consolidation of the Aircraft Maintenance Contractors (AMC), Quality Assurance Evaluators (QAE), and T-38 Contractor Operated and Maintained Base Supply (T-COMBS) staff into one proposed new building, the Aircraft Maintenance Operations Center (AMOC). These personnel are currently located within three separate underutilized facilities: Buildings 640 (AMC), Building 634 (QAE), and Building 642 (T-COMBS). The purpose of this project is to consolidate these three functions into one new AMOC to continue mission activities. Consolidation of these functions is needed to reduce the Columbus AFB footprint and to assist in meeting the United States Air Force's goals of a 20 percent reduction in real property and associated operating costs by the year 2020. Additionally, the project is needed to remove facilities from the Airfield Clear Zone (CZ) (Building 634) and facilities that no longer meet Anti-Terrorism (AT) requirements (Building 640). The EA, prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations, and Air Force instructions implementing NEPA, evaluates potential impacts of the Proposed Action on the environment. A No-action Alternative has also been examined which analyzes the potential effects if Columbus AFB did not construct, consolidate, or demolish any facilities. Based on the EA, the Air Force has prepared a proposed Finding of No Significant Impact (FONSI). Copies of the EA and proposed FONSI are available at the Columbus-Lowndes Public Library, 314 North 7th Street, Columbus, MS 39701 (662-329-5300), and the Columbus AFB Library.

Comments may be submitted through 8 April 2014 and be provided to: Mr. Richard Johnson, Chief, Public Affairs, 14 FTW/PA, 555 Seventh Street, Suite 210, Columbus AFB, MS 39710-6010; United States; (662) 434-7068.

#### **PRIVACY ADVISORY NOTICE**

Public comments on this Draft EA are requested pursuant to NEPA, 42 United States Code 4321, et seq. All written comments received during the comment period will be made available to the public and considered during the final EA preparation. Providing private address information with your comment is voluntary and such personal information will be kept confidential unless release is required by law. However, address information will be used to compile the project mailing list and failure to provide it will result in your name not being included on the mailing list.

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**Appendix B**

**Form 813, Request for  
Environmental Impact Analysis**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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HEADQUARTERS 14TH FLYING TRAINING WING  
14TH CIVIL ENGINEER SQUADRON  
COLUMBUS AIR FORCE BASE MISSISSIPPI

20 Jul 12

MEMORANDUM FOR 14 FTW/JA

ATTENTION: Mr. Biron Ross

FROM: 14 CES/CEP

SUBJECT: AICUZ Regulation AF Form 813, Control Symbol 11-09, Aircraft Maintenance Operations Facility

1. 14 CES/CEP is preparing an Environmental Assessment (EA) under the National Environmental Policy Act of 1969 for the Aircraft Maintenance Operations Facility project. The EA is being prepared in compliance with 14 FTW/JA original concurrence on AF Form 813 in May 2011. 14 CES/CEAO reviewed AF Form 813 for Aircraft Maintenance Operations Facility and found that the Air Installations Compatible Use Zone (AICUZ) regulations were overlooked. These regulations effect aspects of building structure that must be address during construction. 14 CES/CEP will comply with the regulations during construction.
2. 14 CES/CEP requests 14 FTW/JA to review AICUZ Regulation and approve continuation of Aircraft Maintenance Operations Facility project.

A handwritten signature in black ink, appearing to read "Katherine Vowell".

KATHERINE VOWELL  
SpecPro, Inc.

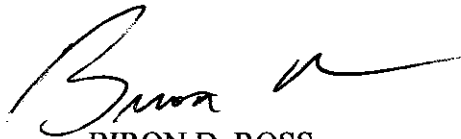
Attachment:

1. Concurrence Letter 11-09
2. AF Form 813 with Maps
3. AICUZ Regulation
4. AICUZ Noise Contour Map

1st Ind, 14 FTW/JA

MEMORANDUM FOR 14 CES/CEP

1. 14 FTW/JA reviewed the 813, and concurs that the regulations in AICUZ must be met during construction.

A handwritten signature in black ink, appearing to read "Biron D. Ross", with a long horizontal flourish extending to the right.

BIRON D. ROSS  
Chief, General Law  
Judge Advocate  
14 FTW (AETC)  
Columbus AFB



**HEADQUARTERS 14TH FLYING TRAINING WING  
14TH CIVIL ENGINEER SQUADRON  
COLUMBUS AIR FORCE BASE MISSISSIPPI**

17 May 11

**MEMORANDUM FOR 14 FTW/JA  
ATTENTION: Mr. Biron Ross**

**FROM: 14 CES/CEAN**

**SUBJECT: Endorsement of AF Form 813, Request for Environmental Impact Analysis Report  
Control Symbol 11-09, Aircraft Maintenance Operations Facility, (EEPZ043004)**

1. 14 CES/CEAN reviewed AF Form 813 for a new Aircraft Maintenance Operations Facility to be constructed at the location indicated on the attached map. The project also includes demolition of the existing facilities.
2. The attached 813 concludes that the proposed action does not qualify for Categorical Exclusion (CATEX) and that further environmental analysis is required.
3. 14 CES/CEAN requests 14 FTW/JA to review before the Environmental Element endorses AF Form 813.

A handwritten signature in black ink that reads "Amanda J. Woods".

**AMANDA J. WOODS  
Spec Pro, Inc.**

**Attachments:  
AF Form 813, Aircraft Maintenance Operations Facility, (EEPZ043004)**



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

19 May 2011

1st Ind, 14 FTW/JA

MEMORANDUM FOR 14 CES/CEAN

1. 14 FTW/JA reviewed the 813, and concurs that the construction of the new Aircraft Maintenance Operations Facility does not qualify for a CATEX and that further environmental analysis is required.

BIRON D. ROSS,  
Chief, General Law

MEMORANDUM FOR 14 CES/CEAN

Concur / ~~Non-concur~~

ROBERT S. HUME, Lt Col, USAF  
Staff Judge Advocate

—Attorney work Product—

This work product has been prepared by or for an attorney in the course of performing legal duties on behalf of a client, and is not to be provided to anyone outside the Air Force without approval of the originator or higher authority. It is exempt from disclosure under the Freedom of Information Act under 5 U.S.C. § 552(b)(5) and protected from release under FRCP 26 (b)(3).

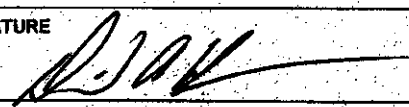


**REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS**

Report Control Symbol  
RCS: 11-09

INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

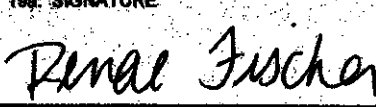
**SECTION I - PROPONENT INFORMATION**

1. TO (Environmental Planning Function) 14.CES/CEAN	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
3. TITLE OF PROPOSED ACTION Aircraft Maintenance Operations Facility, (EEPZ043004)		
4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date) see page 2		
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) see page 2		
6. PROPONENT APPROVAL (Name and Grade) David A. Macon, Capt., USAF	6a. SIGNATURE 	6b. DATE 20110511

**SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.** (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U= unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. WATER RESOURCES (Quality, quantity, source, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. OTHER (Potential impacts not addressed above.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION**

17. <input type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____, OR <input checked="" type="checkbox"/> PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.		
18. REMARKS Columbus Air Force Base is located in an area that is in attainment; therefore, a conformity determination is not required.		
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) RENAE FISCHER Chief, Environmental Element	19a. SIGNATURE 	19b. DATE 20 May 11

**4.0 PURPOSE AND NEED OF THE PROPOSED ACTION**

4.1 The purpose of the action is to provide a Maintenance Operations Control center, responsible for the daily flying schedule, directing all maintenance activities on 219 aircraft with over 85,000 flying hours per year and launch/recovery support for 60,000 sorties per year. Additional functions will include Maint HQ, contract QAEs, industrial functions and T-38 COMBS

4.2 The action is needed because the existing 1958 HQ facility is woefully inadequate, with single pane windows, uninsulated concrete block walls, and failing roof and HVAC systems.

**5.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

5.1 Proposal: MX proposes to consolidate functions from and demolish four separate, underutilized buildings, allowing an estimated 55% footprint reduction [Bldg 640 (16,362 SF constructed in 1958); Bldg 630 (18,450 SF constructed in 1956), Bldg 634 (3,840 SF constructed in 1959), Bldg 642 (2,420 SF constructed in 1959)]. They want to construct a 22,600 SF facility to combine COMBS, Operations Control Center, Aerospace Systems Shop, and QAE functions in the same footprint of the existing facility as a one story building.

5.2 Decision that Must Be Made: The decision that must be made by the Air Force is whether to upgrade to a newer more efficient facility and consolidate functions or not, and if so, accept this project to be placed near the flightline to accomplish the action.

**5.3 Anticipated Environmental Issues**

5.3.1 Hazardous Waste Disposal: Asbestos disposal will be necessary as a result of ongoing demolition associated with this project.

5.3.2 Noise: Temporary construction noise will increase during construction but will have minimal impact to the base due to the proximity to the flightline and its transitory nature.

5.3.3 Air Quality on and Off Base: This project will remove 4 boilers, 1 from each building being demolished, and replace with one diesel/gas fired boiler.

5.3.4 Visual Quality of the Building and Grounds: This project will improve the visual quality of the this area by highlighting the "Showcase of the South" exterior finishes. This project will demolish 4 old buildings further enhancing the visual quality of the area.

5.3.5 Traffic on the Flightline: This project will only affect access to the flightline during construction, but will improve traffic around the flightline after construction.

5.3.6 Water/Stormwater: This project will reduce stormwater in the proposed area due to a decrease in impervious surfaces like parking lots.

5.3.7 Energy: This project will consolidate functions from facilities that are not energy efficient due to their age and use. The design of the new facility will be more energy efficient.

5.4 Selection Criteria: Selection Criteria for the proposed action included location, consolidation of like functions and demolition of outdated facilities.

5.4.1 Operational requirements: The AMOC must be 22,600 S.F. because several functions are combining as well as some functions are now obsolete due to aircraft fleet reductions. This facility will accomplish functions that previously took up 41,000 S.F.

5.4.2 Location Requirements: The proposed AMOC should be located adjacent to the flightline due to the industrial nature of aircraft maintenance the current functions can only be performed at such a location.

5.4.3 Interior requirements: The AMOC would need to have electricity, phone, water/wastewater, climate controls, kitchen facilities, solid waste service, etc, because this is an industrial and administrative area and it would be replacing existing requirements.

5.4.4 Environmental Requirements: (filled out by environmental section)

Hazardous wastes must be disposed of IAW applicable EPA guidelines. A General Stormwater Construction Permit Coverage and/or Stormwater Pollution Prevention Plan are required if the project area exceeds 1 acre. Demolition debris must be disposed of in accordance with Mississippi Department of Environmental Quality (MDEQ).

**5.5 Description of the No Action Alternative and Proposed Action Alternatives**

5.5.1 No-action Alternative: The no action alternative is the continued use of the existing facilities, and would involve no new construction. This is unacceptable because the current facilities are over 50 years old and do not meet mission requirements. The current facilities are a maintenance drain on dwindling resources and are not energy efficient.

5.5.2 Proposed Action Alternative: 2 locations along the flightline were considered, but would cost more to accomplish and would require current facilities to be demolished and several tenants to be moved. The first option was to move functions to different facilities, however, the work flow could not be accomplished because several functions need to be close to each other. These functions couldn't be co-located, causing potential mission stoppage. This would make the flightline congested and impact mission capable rates for training aircraft. Another option considered was to renovate BLDG 630 to accommodate the consolidation of functions. This was not an option due to B630 being on the Consolidation Demolition list. It has been identified and accepted as a risk the base does not want to continue to fund. To justify building a new facility, the base is currently using the square footage for B630 as a targeted demolition site.

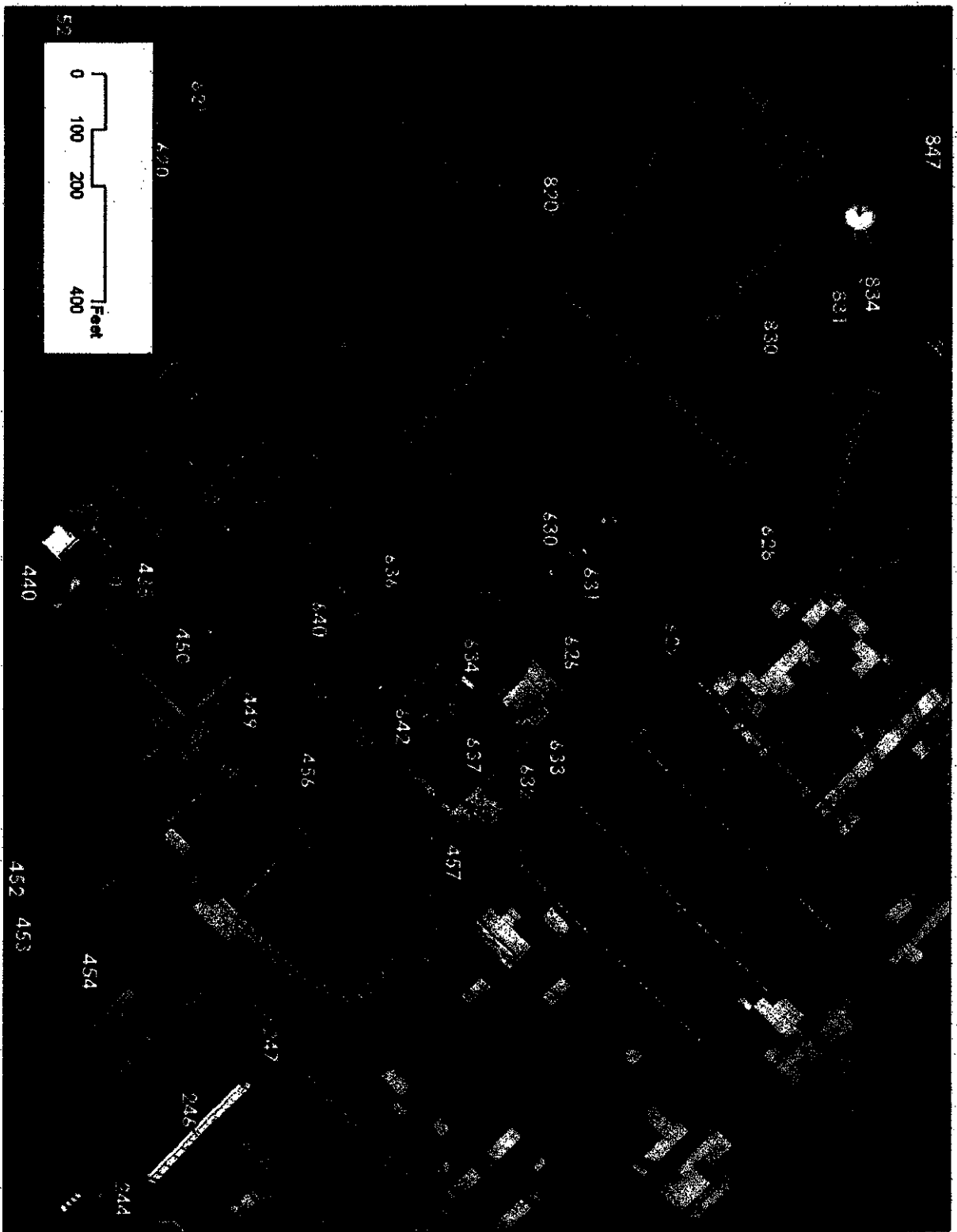
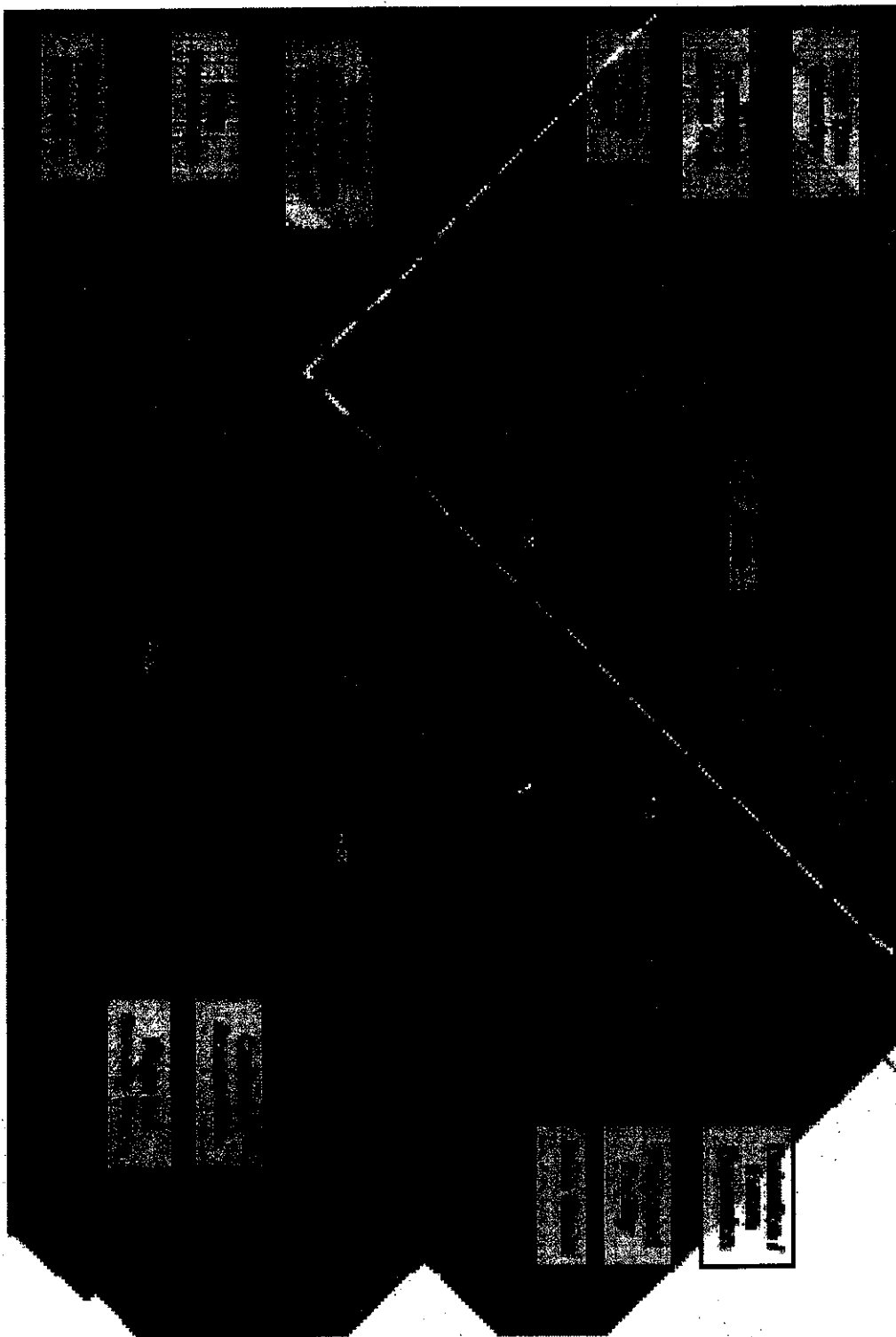


Figure 6.7: Street layout of the site



From the 2012 AICUZ Study

**Table 4-3 Land Use Compatibility Guidelines (Continued)**

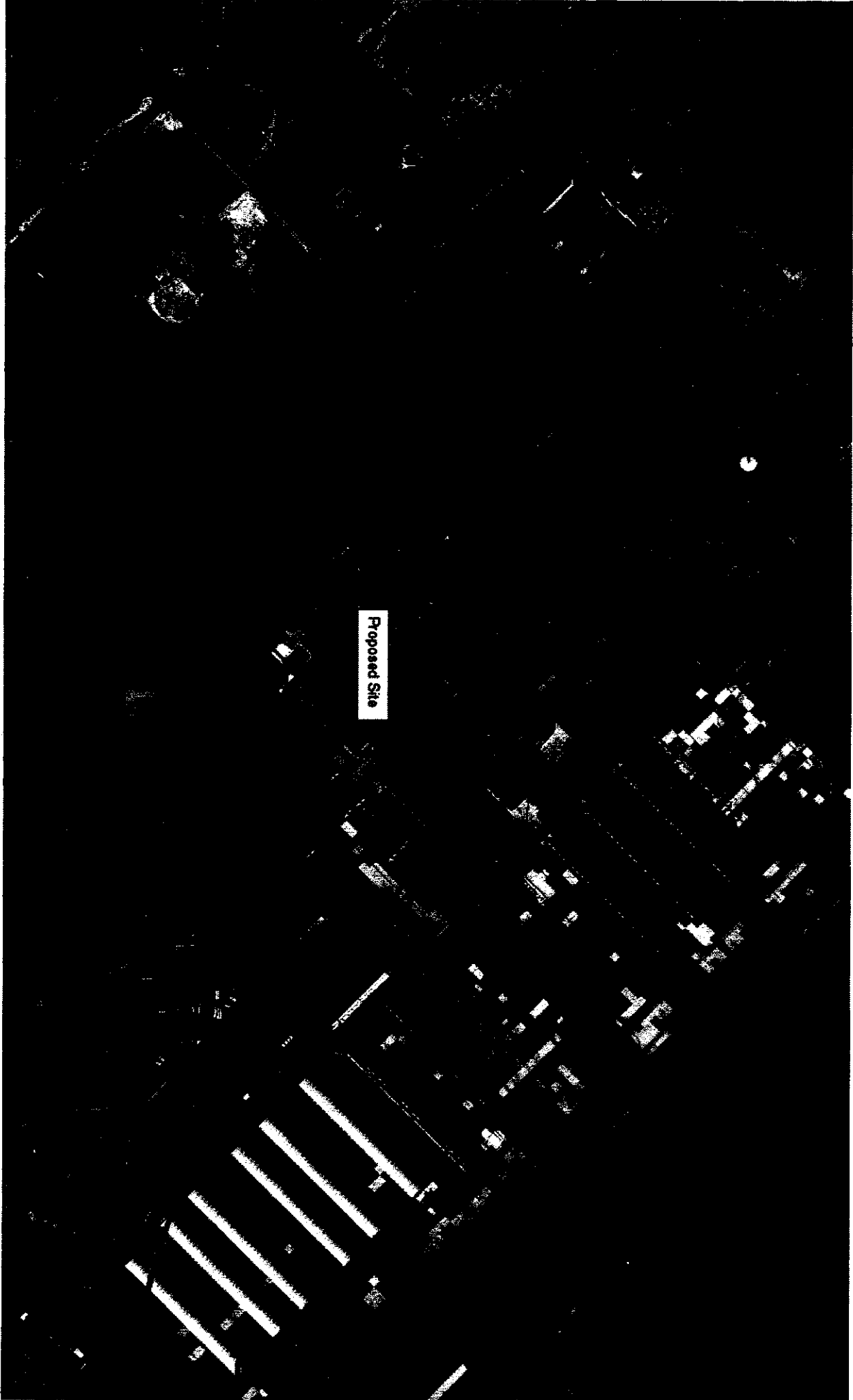
Land Use		Accidental Potential Zones			Moisture Zones			
SLUCM No.	Name	Clear Zone	APZ-I	APZ-II	05-09	70-74	75-79	80+
30	<b>Manufacturing</b>							
31	Rubber and misc. plastic products, manufacturing	N	N <sup>2</sup>	N <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
32	Stone, clay and glass products manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
33	Primary metal industries	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
34	Fabricated metal products; manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks manufacturing	N	N	N <sup>2</sup>	Y	A	B	N
39	Miscellaneous manufacturing	N	Y <sup>2</sup>	Y <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
40	<b>Transportation, Communications and Utilities</b>							
41	Railroad, rapid rail transit and street railroad transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
42	Motor vehicle transportation	N <sup>3</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
43	Aircraft transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
44	Marine craft transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
45	Highway & street right-of-way	N <sup>3</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
46	Automobile parking	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
47	Communications	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	A <sup>15</sup>	B <sup>15</sup>	N
48	Utilities	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>
49	Other transportation communications and utilities	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	A <sup>15</sup>	B <sup>15</sup>	N
50	<b>Trade</b>							
51	Wholesale trade	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
52	Retail trade-building materials, hardware and farm equipment	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
53	Retail trade-general merchandise	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
54	Retail trade-food	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
55	Retail trade-automotive, marine craft, aircraft and accessories	N	Y <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
56	Retail trade-apparel and accessories	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
57	Retail trade-furniture, home furnishings and equipment	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
58	Retail trade-eating and drinking establishments	N	N	N <sup>2</sup>	Y	A	B	N
59	Other retail trade	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
60	<b>Services</b>							
61	Finance, insurance and real estate services	N	N	Y <sup>6</sup>	Y	A	B	N
62	Personal services	N	N	Y <sup>6</sup>	Y	A	B	N
62.4	Cemeteries	N	Y <sup>7</sup>	Y <sup>7</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14,21</sup>
63	Business services	N	Y <sup>8</sup>	Y <sup>8</sup>	Y	A	B	N

The commercial/retail trade and personal and business services categories are compatible without restriction up to DNL 70 dB; however, they are generally incompatible above DNL 80 dB. Between DNLs 70-79 dB, noise level reduction measures should be included in the design and construction of buildings.

The nature of most uses in the public and quasi-public services category requires a quieter environment, and attempts should be made to locate these uses below DNL 65 dB (an Air Force land use recommendation), or else provide adequate noise level reduction.

Although recreational use has often been recommended as compatible with high noise levels, recent research has resulted in a more conservative view. Above DNL 75 dB, noise becomes a factor that limits the ability to enjoy such uses. Where the requirement to hear is a function of the use (e.g., music shell, etc.), compatibility is limited. Buildings associated with golf courses and similar uses should be noise attenuated.

With the exception of forestry activities and livestock farming, uses in the resources production, extraction, and open space category are compatible almost without restrictions.



Proposed Site

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**Appendix C**

**Air Pollutant Emissions Calculations**

**FINAL**

*Environmental Assessment - Aircraft Maintenance Operations Center  
Columbus AFB, Mississippi*

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**Proposed and Alternative Actions - Aircraft Maintenance Operations Center  
Columbus AFB, Columbus, Mississippi  
Appendix C - Air Emission Calculations**

**Contents:**

**Tables**

C-1	Summary of Annual Emissions from All Construction Source:
C-2	Summary of Annual Construction Equipment Exhaust Emission:
C-3	Construction Emission Factors
C-4	Annual Emissions from Grading Operations
C-5	Summary of Annual Emissions from Construction POV
C-6	Summary of Annual Emissions from On-Road Diesel Vehicle:
C-7	Summary of Annual Paving Equipment Exhaust Emission:
C-8	Paving Equipment Emission Factors
C-9	Summary of Roadway Removal Emissions:

**Emission Calculations:**

Construction/Demolition Equipment Emissions:

$$\text{Construction EF (lb/1,000 ft}^2\text{)} = \text{Average Construction Equipment Usage Rate (hr/ 1,000 ft}^2\text{)} \times \text{Equipment EF (lb/hr)}$$

Where,

EF = emission factor

$$\text{Pollutant Emissions (lbs)} = \text{Construction EF (lb/1,000 ft}^2\text{)} \times \text{total square feet of construction or demolition}$$

Grading: Fugitive Dust Emissions:

$$\text{Annual PM}_{10} \text{ emissions} = 0.11 \text{ ton PM}_{10}/\text{acre/month} \times (\text{total acres}) \times \text{total months of activity}$$

Source: Western Regional Air Partnership (WRAP) Fugitive Handbook (11/04) Section 3.2 PM Emissions from construction.

Paving Equipment Equipment Emissions:

$$\text{Paving EF (lb/1,000 yd}^3\text{)} = \text{Average Paving Equipment Usage Rate (hr/ 1,000 yd}^3\text{)} \times \text{Equipment EF (lb/hr)}$$

Where,

EF = emission factor

$$\text{Pollutant Emissions (lbs)} = \text{Paving EF (lb/1,000 yd}^3\text{)} \times \text{total ft}^3 \text{ of asphalt}/27 \text{ ft}^3/\text{yard}/1,000$$

Privately Owned Vehicle (POV) and On-Road Diesel Vehicle Emissions

$$\text{Pollutant emissions} = \{ \text{Total vehicle miles traveled per year (miles/yr)} \times \text{Pollutant EF (g/mile)} \} / 453.59 \text{ g/lb}$$

Where,

EF = emission factor

453.59 g/lb = conversion factor from grams to pounds

Paving, Grading, and Railroad Removal Equipment Emissions:

$$\text{Pollutant Emissions} = \{ \text{equipment operation (hr/yr)} \times \text{EF (g/hp-hr)} \times \text{load factor (\%)} \times \text{horsepower (hp)} \} / 453.59 \text{ g/lb}$$

Where,

EF = emission factor

453.59 g/lb = conversion factor from grams to pounds

Material Loading and Dumping: Fugitive Dust Emissions:

$$\text{EF}_{\text{PM}_{10/2.5} \text{ (lb/ton)}} = (0.0032k) \frac{(U/5)^{1.3}}{(M/2)^{1.4}} \quad \text{Eq. 2, AP-42 13.2.4}$$

k = Particle Size Multiplier

U = Mean Wind Speed

M = Surface Material Moisture Content (dry)

**Table C-1**  
**Summary of Annual Emissions from All Construction Sources<sup>a</sup>**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

Action	Annual Emissions (ton/yr)						
	VOC	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	CO <sub>2</sub>
Proposed	0.39	4.5	2.0	0.34	0.13	0.12	613
No Action Alternative	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

NO<sub>x</sub> = oxides of nitrogen

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

ton/yr = US (short )tons per year

VOC = volatile organic compounds

Notes:

a To be conservative, it has been assumed that all Proposed Action activities would take place in a single year.

**Table C-2**  
**Summary of Annual Construction Equipment Exhaust Emissions<sup>a</sup>**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

Action	Annual Emissions (ton/yr)						
	VOC	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	CO <sub>2</sub>
Proposed	0.079	0.40	1.2	0.071	0.071	0.076	251
No Action Alternative	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

NO<sub>x</sub> = oxides of nitrogen

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

ton/yr = US (short )tons per year

VOC = volatile organic compounds

	Action =	Proposed	No Action	
Total New Construction =		20,938	0	square feet/year
Total Demolition <sup>b</sup> =		22,622	0	square feet/year

Notes:

a To be conservative, it has been assumed that all Proposed Action activities would take place in a single year.

b Demolition does not include roadway (asphalt/concrete) removal. See Table F-9.

**Table C-3  
Construction Emission Factors  
Aircraft Maintenance Operations Center  
Columbus AFB, Columbus, Mississippi**

Average Construction Equipment Usage Rates (hours) <sup>a</sup>				Equipment Emission Factors <sup>b,c,d,e</sup>						
Construction Equipment	New Construction		Demolition	VOC (lb/hr)	CO (lb/hr)	NO <sub>x</sub> (lb/hr)	PM <sub>10</sub> (lb/hr)	PM <sub>2.5</sub> (lb/hr)	SO <sub>2</sub> (lb/hr)	CO <sub>2</sub> (lb/hr)
	Single Story (per 1,000 ft <sup>2</sup> )	Multi-Story (per 1,000 ft <sup>2</sup> )	Single/Multi-Story (per 1,000 ft <sup>2</sup> )							
Backhoe	2.6901	2.1943	-	0.007	0.084	0.107	0.011	0.011	0.006	21.0
Bulldozer	1.1833	1.3866	-	0.077	0.390	1.157	0.069	0.069	0.074	245
Concrete Truck	7.5282	3.7641	-	0.143	0.720	2.138	0.128	0.128	0.137	454
Crane	10.3343	15.5449	3.0000	0.034	0.137	0.459	0.028	0.028	0.029	97.5
Dump Truck	4.2281	3.4009	7.9600	0.143	0.720	2.138	0.128	0.128	0.137	454
Front-end Loader	2.6800	2.5183	4.0000	0.015	0.070	0.202	0.018	0.018	0.013	43.0
18-Wheel Truck	28.0799	30.0545	-	0.143	0.720	2.138	0.128	0.128	0.137	454

Pollutant	Construction Equipment Emission Factors		
	New Construction		Demolition
	Single Story (lb/1,000 ft <sup>2</sup> )	Multi-Story (lb/1,000 ft <sup>2</sup> )	Single/Multi-Story (lb/1,000 ft <sup>2</sup> )
VOC	6.2	6.0	1.3
CO	31.0	29.9	6.4
NO <sub>x</sub>	92.1	89.1	19.2
PM <sub>10</sub>	5.6	5.4	1.2
PM <sub>2.5</sub>	5.6	5.4	1.2
SO <sub>2</sub>	5.9	5.7	1.2
CO <sub>2</sub>	19,544	18,898	4,076

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

g/hp-hr = gram per horsepower - hour

hp = horsepower

lb = pound

lb/hr = pound per hour

NO<sub>x</sub> = nitrogen oxides

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

VOC = volatile organic compound

yd<sup>3</sup> = cubic yard

Notes:

a Source: 1996 Means Building Construction Cost Data, 54th Annual Edition

b Source: USEPA, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-CI, April 2004. Assumed Tier 3 for all equipment.

The g/hp-hr emission factors converted to lb/hr; using horsepower from Nonroad Engine and Vehicle Emission Study (11/91), Table 2-04 and NONROAD2008 load factor.

c CO<sub>2</sub> emission factor source: Table 4.9 of USEPA's Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, April 2009.

Emission factors given in Table 4.9 are based upon the reference in footnote b above. The g/hp-hr emission factors converted to lb/hr; using horsepower from Nonroad Engine and Vehicle Emission Study (11/91), Table 2-04 and NONROAD2008 load factor. Assumed Tier 3 for all equipment.

d Assumed PM<sub>2.5</sub> = PM<sub>10</sub>

e Assumed 500 ppm sulfur content.

**Table C-4**  
**Annual Emissions from Grading Operations<sup>a</sup>**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

**Equipment Operation (Exhaust Emissions)**

Type	Days worked per year	Hours Operation (hr/day)	Hours Operation (hr/yr)	Horsepower <sup>b</sup> (hp)	Load Factor <sup>c</sup> (%)	Exhaust Emission Factors <sup>d</sup>						
						VOC (g/hp-hr)	CO (g/hp-hr)	NO <sub>x</sub> (g/hp-hr)	PM <sub>10</sub> (g/hp-hr)	PM <sub>2.5</sub> (g/hp-hr)	SO <sub>2</sub> (g/hp-hr)	CO <sub>2</sub> <sup>e</sup> (g/hp-hr)
Light Truck	25	8	200	250	25	0.17	0.75	2.5	0.15	0.15	0.16	530.5
Dump Truck	25	8	200	658	25	0.17	1.33	2.5	0.15	0.15	0.16	530.5
Water Truck	25	8	200	658	25	0.17	1.33	2.5	0.15	0.15	0.16	530.5
Scraper	25	8	200	290	60	0.19	0.75	2.5	0.15	0.15	0.16	530.5
Front-end Loader	25	8	200	300	38	0.18	0.75	2.5	0.15	0.15	0.16	530.5
Grader	25	8	200	300	54	0.18	0.75	2.5	0.15	0.15	0.16	530.5
Bobcat	25	8	200	85	48	0.18	2.37	3.0	0.30	0.30	0.18	589.8

**Equipment Operation (Exhaust Emissions Continued)**

Type	Exhaust Emission Rates							Fugitive Dust Emissions <sup>f</sup>					
	VOC (ton/yr)	CO (ton/yr)	NO <sub>x</sub> (ton/yr)	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)	SO <sub>2</sub> (ton/yr)	CO <sub>2</sub> (ton/yr)	Action	Total Area (acre)	General Factor (ton/acre/month)	Duration of Project (months)	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)
Light Truck	2.30E-03	0.010	0.034	2.06E-03	2.06E-03	2.20E-03	7.3	Proposed	0.73	0.011	12	0.10	0.020
Dump Truck	6.05E-03	0.048	0.091	5.44E-03	5.44E-03	5.80E-03	19.2	No Action	0	0.011	12	0.0	0.0
Water Truck	6.05E-03	0.048	0.091	5.44E-03	5.44E-03	5.80E-03	19.2						
Scraper	7.42E-03	0.029	0.096	5.75E-03	5.75E-03	6.13E-03	20.3						
Front-end Loader	4.61E-03	0.019	0.063	3.77E-03	3.77E-03	4.02E-03	13.3						
Grader	6.55E-03	0.027	0.089	5.35E-03	5.35E-03	5.71E-03	18.9						
Bobcat	1.65E-03	0.021	0.027	2.70E-03	2.70E-03	1.62E-03	5.3						
<b>Total Proposed Action</b>	<b>0.035</b>	<b>0.20</b>	<b>0.49</b>	<b>0.030</b>	<b>0.030</b>	<b>0.031</b>	<b>104</b>						
<b>Total No Action</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>						

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

ft<sup>2</sup> = square feet

g/hp-hr = gram per horsepower - hour

hp = horsepower

hr/day = hours per day

hr/yr = hours per year

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

ton/yr = tons per year

VOC = volatile organic compound

yd<sup>3</sup> = cubic yard

Notes:

a Emissions are from the grading operations required during construction. It was assumed that it would require 5 weeks (25 days/year working 8 hours/day).

b Assumed average horsepower for this type of equipment.

c Nonroad Engine and Vehicle Emission Study (11/91), Table 2-05

d Source: USEPA, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-CI, April 2004. Assumed Tier 3 for all equipment and PM<sub>5</sub> = PM<sub>10</sub>.

e CO<sub>2</sub> emission factor source: Table 4.9 of USEPA's Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, April 2009. Table 4.9 based upon footnote d above.

f Calculations based upon emission factors from Western Regional Air Partnership (WRAP), "WRAP Fugitive Dust Handbook," 2004, Section 3.

It was assumed that the footprint for all construction and demolition would require grading.

**Table C-5**  
**Summary of Annual Emissions from Construction POV<sup>a</sup>**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

**Car/Light Truck (Exhaust Emissions)**

Days worked	Total Number of Worker Vehicles	Vehicles Miles Traveled (miles/day)	Vehicles Miles Traveled (miles/Action)	Emission Factor <sup>b</sup> (g/mile)						
				CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC	CO <sub>2</sub>
250	25	50	312,500	11.2	0.63	0.025	0.011	0.0095	0.717	515.4

**Car/Light Truck (Exhaust Emissions Continued)**

Annual Emissions Each Action (ton/yr)						
CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC	CO <sub>2</sub>
3.9	0.22	8.58E-03	3.89E-03	3.27E-03	0.25	178

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

g/mile = gram mile

NO<sub>x</sub> = oxides of nitrogen

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

POV = privately owned vehicle

SO<sub>2</sub> = sulfur dioxide

ton/yr = US (short) tons per year

VOC = volatile organic compounds

Notes:

a Construction worker private vehicle travel to the work site. Assumed two workers per vehicle. Conservatively assumed every worker vehicle would travel 50 miles per day for each day worked. Workers and miles traveled assumed to be the same for each phase of development.

b Emission Factor Source: U.S. Environmental Protection Agency's Mobile Source Emission Factor Model (MOBILE6.2, 24-Sep-2003). Assumed all LDGT vehicle class traveling an average speed of 45 mph in year 2014.



**Table C-6**  
**Summary of Annual On-Road Diesel Vehicle Combustion Emissions**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

Action	Annual Emissions (ton/yr)						
	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC	CO <sub>2</sub>
Proposed	0.040	0.062	5.32E-03	3.70E-03	6.09E-04	0.021	65.3
No Action Alternative	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

g/mile = grams per mile

mph = miles per hour

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

NO<sub>x</sub> = oxides of nitrogen

SO<sub>2</sub> = sulfur dioxide

ton/yr = US (short) tons per year

VMT = vehicle miles traveled

VOC = volatile organic compounds

Notes

a Annual emissions = MOBILE6 EF (g/mile) \* Annual VMT

MOBILE6 Vehicle Type Category <sup>a</sup>	LDDT <sup>b</sup>	HDDV3 <sup>c</sup>	
Roadway Type	Paved <sup>d</sup>	Paved <sup>d</sup>	
Annual Average VOC Emission Factor :	0.269	0.103	g/mile
Annual Average NO <sub>x</sub> Emission Factor :	0.430	1.171	g/mile
Annual Average CO Emission Factor :	0.483	0.227	g/mile
Annual Average CO <sub>2</sub> Emission Factor :	598.6	873.7	g/mile
Annual Average SO <sub>2</sub> Emission Factor :	0.0056	0.0081	g/mile
Annual Average PM <sub>10</sub> Emission Factor :	0.0561	0.0528	g/mile
Annual Average PM <sub>2.5</sub> Emission Factor :	0.0400	0.0344	g/mile

	LDDT <sup>e</sup>	HDDV3 <sup>f</sup>	
Total Annual VMT	62,500	25,000	miles/yr

Notes:

a Emission Factor Source (year 2014): U.S. Environmental Protection Agency's Mobile Source Emission Factor Model (MOBILE6.2).

b LDDT = Light duty diesel powered trucks (i.e., includes diesel pickup trucks, sport utility vehicles and vans with GVWR ≤ 8,500 pounds.)

c HDDV3 = Heavy duty diesel powered vehicles (i.e., includes diesel trucks and buses with GVWR 10,001 - 14,000 pounds.)

d Assumed all vehicles travel average speed of 45 mph.

e LDDT VMT based upon 5 vehicles traveling 50 miles/day for 250 working days/year.

f HDDV3 VMT based upon 2 loads/day traveling 50 miles per load.

**Table C-7**  
**Summary of Annual Paving Equipment Exhaust Emissions<sup>a</sup>**  
**Aircraft Maintenance Operations Center**  
**Columbus AFB, Columbus, Mississippi**

Action	Annual Emissions (ton/yr)						
	VOC	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	CO <sub>2</sub>
Proposed	3.18E-03	0.020	0.047	3.50E-03	3.50E-03	2.96E-03	9.8
No Action Alternative	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

NO<sub>x</sub> = oxides of nitrogen

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

VOC = volatile organic compounds

Action =    Proposed    No Action  
Total concrete =    1,476            0.0        cubic yards/year<sup>b</sup>

Notes:

a It has been assumed that new paving is equal to the amount of demolition (22,622 sq. ft.) plus roadway area (9,250 sq. ft.)

b Paving = 15 inches of portland cement.

**Table C-8  
Paving Equipment Emission Factors  
Aircraft Maintenance Operations Center  
Columbus AFB, Columbus, Mississippi**

Average Paving Equipment Usage Rates (hours)				Equipment Emission Factors <sup>b,c,d,e</sup>						
Paving Operations				VOC	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	CO <sub>2</sub>
Construction Equipment	Asphalt (per 1,000 yd <sup>3</sup> )	Gravel/Dirt (per 1,000 yd <sup>3</sup> )	Concrete (per 1,000 yd <sup>3</sup> )	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Blower	16.00	-	-	0.038	0.181	0.523	0.046	0.046	0.033	111.0
Bulldozer	6.15	6.15	16.00	0.077	0.390	1.157	0.069	0.069	0.074	245.5
Concrete Truck	-	-	203.26	0.143	0.720	2.138	0.128	0.128	0.137	453.7
Dump Truck	10.95	40.13	40.13	0.143	0.720	2.138	0.128	0.128	0.137	453.7
Front-end Loader	-	16.00	16.00	0.015	0.070	0.202	0.018	0.018	0.013	43.0
Paver	8.00	-	-	0.018	0.237	0.300	0.015	0.015	0.018	59.0
Roller	23.91	23.91	-	0.024	0.304	0.386	0.039	0.039	0.023	75.9
Scraper	4.80	-	-	0.069	0.282	0.942	0.083	0.083	0.060	200.0
Striper	16.00	-	-	0.038	0.181	0.523	0.046	0.046	0.033	111.0
18-Wheel Truck	-	-	182.17	0.143	0.720	2.138	0.128	0.128	0.137	453.7

Pollutant	Paving Operations		
	Asphalt (lb/1,000 yd <sup>3</sup> )	Gravel/Dirt (lb/1,000 yd <sup>3</sup> )	Concrete (lb/1,000 yd <sup>3</sup> )
VOC	4.31	7.00	62.21
CO	26.61	39.71	313.94
NO <sub>x</sub>	63.42	105.37	931.49
PM <sub>10</sub>	4.75	6.78	55.98
PM <sub>2.5</sub>	4.75	6.78	55.98
SO <sub>2</sub>	4.01	6.71	59.62
CO <sub>2</sub>	13,279	22,219	197,699

CO = carbon monoxide

CO<sub>2</sub> = carbon dioxide

g/hp-hr = gram per horsepower - hour

hp = horsepower

lb = pound

lb/hr = pound per hour

NO<sub>x</sub> = nitrogen oxides

PM<sub>10</sub> = particulate matter equal or less than 10 micrometers in diameter

PM<sub>2.5</sub> = particulate matter equal or less than 2.5 micrometers in diameter

SO<sub>2</sub> = sulfur dioxide

VOC = volatile organic compound

yd<sup>3</sup> = cubic yard

Notes:

a Source: 1996 Means Building Construction Cost Data, 54th Annual Edition

b Source: USEPA, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-CI, April 2004. Assumed Tier 3 for all equipment.

The g/hp-hr emission factors converted to lb/hr; using horsepower from Nonroad Engine and Vehicle Emission Study (11/91), Table 2-04 and NONROAD2008 load factor.

c CO<sub>2</sub> emission factor source: Table 4.9 of USEPA's Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, April 2009.

Emission factors given in Table 4.9 are based upon the reference in footnote b above. The g/hp-hr emission factors converted to lb/hr; using horsepower from Nonroad Engine and Vehicle Emission Study (11/91), Table 2-04 and NONROAD2008 load factor. Assumed Tier 3 for all equipment.

d Assumed PM<sub>2.5</sub> = PM<sub>10</sub>

e Assumed 500 ppm sulfur content.

**Table C-9  
Summary of Roadway Removal Emissions  
Aircraft Maintenance Operations Center  
Columbus AFB, Columbus, Mississippi**

**Loading Excavated Asphalt/Concrete to Trucks and Truck Dumping (Existing Roadway (Asphalt/Concrete) Removal)**

Proposed Action	M	U	k <sub>PM10</sub>	k <sub>PM2.5</sub>	Mass Asphalt Concrete Excavated (ton/yr)	Emission Rates	
	(moisture content)	(mean wind speed)	(particle size multiplier)	(particle size multiplier)		PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)
Fugitive Dust	11.0	10.3	0.35	0.053	463	<b>0.12</b>	<b>3.99E-05</b>

**Demolition Equipment Operation (Exhaust Emissions)**

Type	Hours Operation (hr/yr)	Horsepower (hp)	Load Factor <sup>a</sup> (%)	Emission Factors <sup>b,c,d,e</sup>						
				PM <sub>10</sub> (g/hp-hr)	PM <sub>2.5</sub> (g/hp-hr)	NO <sub>x</sub> (g/hp-hr)	CO (g/hp-hr)	SO <sub>2</sub> (g/hp-hr)	VOC (g/hp-hr)	CO <sub>2</sub> (g/hp-hr)
Light Truck	25	250	25	0.0092	0.0092	0.276	0.075	0.16	0.1314	530.6
Dump Truck	25	658	25	0.0092	0.0092	0.276	0.084	0.16	0.1314	530.6
Front-end Loader	25	300	38	0.0092	0.0092	0.276	0.075	0.16	0.1314	530.6
Backhoe	25	200	38	0.0092	0.0092	0.276	0.075	0.16	0.1314	530.6

**Demolition Equipment Operation (Exhaust Emissions Continued)**

Type	Emission Rates						
	PM <sub>10</sub> (ton/yr)	PM <sub>2.5</sub> (ton/yr)	NO <sub>x</sub> (ton/yr)	CO (ton/yr)	SO <sub>2</sub> (ton/yr)	VOC (ton/yr)	CO <sub>2</sub> (ton/yr)
Light Truck	1.58E-05	1.58E-05	4.75E-04	1.29E-04	2.75E-04	2.26E-04	0.91
Dump Truck	4.17E-05	4.17E-05	1.25E-03	3.80E-04	7.25E-04	5.95E-04	2.4
Front-end Loader	2.89E-05	2.89E-05	8.66E-04	2.35E-04	5.02E-04	4.12E-04	1.7
Backhoe	1.93E-05	1.93E-05	5.78E-04	1.57E-04	3.35E-04	2.75E-04	1.1
<b>Totals</b>	<b>1.06E-04</b>	<b>1.06E-04</b>	<b>3.17E-03</b>	<b>9.02E-04</b>	<b>1.84E-03</b>	<b>1.51E-03</b>	<b>6.1</b>

Notes:

a Source: Nonroad Engine and Vehicle Emission Study-Report (11/91)

b Source: USEPA, Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-CI, April 2010. Assumed Tier 4 for all equipment.

c CO<sub>2</sub> emission factor source: Table 4.9 of USEPA's Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, April 2009.

d Assumed PM<sub>2.5</sub> = PM<sub>10</sub>

e Assumed 500 ppm sulfur content.