Final

AIR FORCE COMMAND AND CONTROL INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE CENTER (AFC2ISRC) ENVIRONMENTAL ASSESSMENT

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Air Combat Command

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14. ABSTRACT

The purpose of the proposed action is to permanently consolidate the AFC2ISRC and its divisions in a single facility on Langley AFB. The proposal would allow the Air Force to improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, facilitate the command and control of intelligence, and ensure that information sent to battlefield commanders is accurate and in near real-time. The AFC2ISRC and its divisions currently operate from five geographically separated facilities on and off Langley AFB. In 2005, competing demands for office space on Langley AFB will force a move of approximately 800 more AFC2ISRC personnel to off-base leased offices in Hampton Virginia. Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (183,000 square feet of interior space) and an approximate 700-vehicle parking lot in the north central portion of Langley AFB. The Air Force analyzed three potential location alternatives for construction of the AFC2ISRC facility. Construction would begin in 2008 and last approximately 30 months. In addition to the proposed action, the Air Force analyzed the no-action alternative. Under the no-action alternative, the Air Force would not construct a new facility to consolidate the AFC2ISRC and its AFTC, C2BL, and AFEO divisions on Langley AFB at this time.

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ACRONYMS AND ABBREVIATIONS

1 FW	1st Fighter Wing
ACAM	Air Conformity Applicability Model
ACM	Asbestos-Containing Materials
AFB	Air Force Base
AFC2ISRC	Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center
Air Force	United States Air Force
AFEO	Air Force Experimentation Office
AFTC	Air Force Transformation Center
AQCR	Air Quality Control Region
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CBPA	Chesapeake Bay Preservation Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
C2BL	Command and Control Battlelab
C2ISR	Command and Control Intelligence, Surveillance and Reconnaissance
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibel
DoD	Department of Defense
DEQ	Department of Environmental Quality
DHR	Department of Historic Resources
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESQD	Explosive Safety Quantity Distance
ft	Foot/Feet
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
H_2S	Hydrogen Sulfur
HAZMAT	Hazardous Materials
HQ	Headquarters
HQ ACC	Headquarters Air Combat Command
HTA	Heavier-than-Air
HWMP	Hazardous Waste Management Plan
HWSA	Hazardous Waste Storage Area
IBD	Inhabited Building Distance
IDA	Intensely Developed Area
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
km	Kilometer
LHH	League for Hard of Hearing
LTA	Lighter-than-Air
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NASA	National Aeronautics and Space Administration Langley Research Center
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NGVD	National Geodetic Vertical Datum
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
OSC	Operational Support Center
OSHA	Occupational Health and Safety Act
Pb	Lead
$PM_{2.5}$	Particulate Matter less than 2.5 Microns
PM_{10}	Particulate Matter less than 10 Microns
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RPA	Resource Protection Area
SAV	Submerged Aquatic Vegetation
sf	Square Foot/Feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SMP	Stormwater Management Plan
TSCA	Toxic Substance Control Act
UFC	Unified Facilities Criteria
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VCP	Virginia Coastal Resources Management Program
VCRMP	Virginia Coastal Resources Management Program
VDCR	Virginia Department of Conservation Resources
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historic Resources
VMRC	Virginia Marine Resources Commission
VPDES	Virginia Pollutant Discharge Elimination System
VWPPP	Virginia Water Protection Permit Program

FINAL
FINDING OF NO SIGNIFICANT IMPACT/
FINDING OF NO PRACTICABLE ALTERNATIVE

1.0 NAME OF THE PROPOSED ACTION

Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC).

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The United States Air Force (Air Force) proposes to permanently consolidate the AFC2ISRC and its divisions—Air Force Transformation Center (AFTC), Command and Control Battlelab (C2BL), and Air Force Experimentation Office (AFEO)—in a single, comprehensive facility on Langley Air Force Base (AFB) in Hampton, Virginia. The AFC2ISRC is the lead organization that integrates and influences command and control as well as intelligence, surveillance, and reconnaissance for the Air Force. The proposal would allow the Air Force to improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, facilitate the command and control of intelligence, and ensure that information sent to battlefield commanders is accurate and in near real-time. Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (183,000 square feet of interior space) and an approximate 700-vehicle parking lot in the north central portion of Langley AFB. This facility would be constructed to accommodate 1,000 occupants, support associated communications and utility needs, as well as provide adequate parking and access. The Air Force analyzed three potential alternative locations on Langley AFB for the AFC2ISRC facility construction which would begin in 2008 and last approximately 30 months.

In addition, the Air Force analyzed the no-action alternative under which a new facility, consolidating the AFC2ISRC and its three divisions, would not be constructed at this time. The AFC2ISRC and its divisions would remain geographically separated on and off Langley AFB. In 2005, competing demands for office space on Langley AFB will force a move of approximately 800 more AFC2ISRC personnel to off-base leased offices in Hampton, Virginia.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The Environmental Assessment (EA) provides an analysis of the potential environmental consequences resulting from implementation of the proposed action. Eight resource categories were thoroughly analyzed to identify potential impacts. According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category. Implementing the alternatives under the proposed action would not significantly affect existing conditions at Langley AFB. The following summarizes and highlights the results of the analysis by resource category.

Air Quality. Under each proposed action alternative, additional emissions of less that 0.01percent of all criteria pollutants in the Hampton Roads Air Quality Control Region, with the exception of PM_{10}, would be created during demolition and construction. In 2008, site preparation activities would contribute 0.05 percent of PM_{10} to regional air quality. Emissions would remain unchanged under the no-action alternative.

Water Resources, Water Quality, and Soils. Implementation of the proposed action at any of the alternative sites would increase the impervious surface on Langley AFB by approximately 8.3 acres. A stormwater dry basin would capture runoff and protect surface waters. Surface water would be negligibly affected by construction sedimentation and soil erosion as the closest surface water is the Northwest Branch of the Back River located approximately 0.25 miles from Alternative B and C. Soil composition, in an already disturbed portion of the base, would be altered due to facility elevation which would add 12,150 cubic yards of fill at Alternative A and 15,200 cubic yards of fill at Alternatives B and C. No changes to existing water resources, water quality, and soil conditions would occur under the no-action alternative.

Biological Resources. No long-term impacts to vegetation or wildlife would be expected in any of the alternative locations. No threatened, endangered, or sensitive species occur in any of the alternative locations under the proposed action; therefore, no impacts to these resources would be expected. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken. No changes to existing biological resources would occur since the AFC2ISRC would not be constructed under the no-action alternative.

Cultural and Traditional Resources. Architectural surveys have identified areas eligible for the National Register of Historic Places, but none would be affected by implementation of Alternative A or C. A housing area adjacent to Alternative B is eligible for the National Register of Historic Places. The size of the proposed facility in comparison to the historic facilities may adversely affect the character of the adjacent historic district. Implementation of Alternative B under the proposed action may require consultation with the Virginia State Historic Preservation Office. No impacts to cultural or traditional resources would occur through implementation of the no-action alternative.

Hazardous Materials and Hazardous Waste. No new waste streams would be created through implementation of the alternatives under the proposed action. Buildings 1390 and 1395, which constitute one of two 90-day Satellite Accumulation Points on Langley AFB, would be demolished under Alternative A; a new site would be selected on the base. An old barn would be demolished under Alternative C. Examination for asbestos-containing material and lead-based paint would occur prior to demolition and disposed according to regulations. No additional impacts to this resource would be expected under the no-action alternative since no demolition would occur at these sites.

Coastal Zone, Floodplains, and Wetlands. Each of the alternative sites under the proposed action is located within the coastal zone and within the floodplain which would require that the facility footprint at each location be elevated by 4 to 5 feet. Removal of wetlands would occur at Alternative A and C (0.05 acres and 1.23 acres, respectively) affecting about 1 percent of Langley AFB wetlands. Removal of the wetlands would require mitigation under either Alternatives A and C. If either of these alternatives were chosen for AFC2ISRC facility construction, a wetland mitigation plan would be required within 90 days of a finding of no significant impact/finding of no practicable alternative signature (32 Code of Federal Regulations Part 989.22(d)). No impacts to wetlands would occur under Alternative B or the no-action alternative.

Socioeconomics. A short-term, positive input into the regional economy would occur during the 30-month construction period under any of the proposed action alternatives. The regional economy would be capable of absorbing the short-term beneficial gain and would not present any adverse effects if the proposed action were implemented. No change to the regional economy would occur under the no-action alternative.

Land Use, Visual, and Recreational Resources. Under the proposed action, land use designation at each of the alternative sites would need to be changed from their current status to administrative: Alternative A is designated industrial, Alternative B is outdoor recreation, and Alternative C is open area. A zoning waiver from HQ ACC would be required to change the land use designation of Alternative A and B. Removal of 10.3 acres of a wooded lot (Alternative A) representing approximately 4.5 percent of the total forested area on base, removal of two ball fields (Alternative B), or loss of the horse pasture (Alternative C) would change the land use and visual character at each of the locations if the AFC2ISRC were constructed. Recreational resources would be impacted through loss of two of seven ball fields (Alternative B) and equestrian services (Alternative C). No change in existing conditions for land management and use or visual and recreational resources would occur if the AFC2ISRC were not built.

4.0 FINDINGS

On the basis of the findings of the EA, conducted in accordance with the requirement of the National Environmental Policy Act, the Council on Environmental Quality regulations, and Air Force Instruction 32-7061 as promulgated in 32 Code of Federal Regulations Part 989, and after careful review of the potential impacts of the proposed action location alternatives and no-action alternative, I find that there would be no significant impact on the quality of the human or natural environment from the implementation of the proposed action location alternatives or no-action alternative described in the EA. Therefore, I find there is no requirement to develop an Environmental Impact Statement.

Pursuant to Executive Order 11988, *Floodplain Management*, the authority delegated in Secretary of the Air Force Order 791.1, and the written redelegations accomplished pursuant to this order, and in taking the above information into account, I find there is no practicable alternative to implementing the proposed action within the floodplain. In accordance with Executive Order 11990, *Protection of Wetlands* authority delegated in the Secretary of the Air Force Order 791.1, and the written redelegations accomplished pursuant to the order, I find that there would be minimal to no impact on wetland environments from this construction.

PATRICK A. BURNS
Brigadier General, USAF
Director of Installations (A7)

15 Aug 05
Date

COVER SHEET
AIR FORCE COMMAND AND CONTROL INTELLIGENCE, SURVEILLANCE, RECONNAISANCE CENTER
ENVIRONMENTAL ASSESSMENT

Responsible Agency: United States Air Force, Air Combat Command

Proposed Action: To consolidate the Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC) and its divisions—Air Force Transformation Center (AFTC), Command and Control Battlelab (C2BL), and Air Force Experimentation Office (AFEO)—in a single, comprehensive facility on Langley Air Force Base (AFB). The proposal would improve the efficiency and cohesion of the functional groups that comprise the AFC2ISRC, provide synergy between the functions, and facilitate the command and control of intelligence information.

Written comments and inquiries regarding this document should be directed to:

HQ ACC/A7ZP
129 Andrews St., Ste 102
Langley AFB, VA 23665-2769
ATTN: Mr. Troy Andersen

In addition, the document can be viewed on and downloaded from the World Wide Web at www.cevp.com.

Designation: Final Environmental Assessment

Abstract: The purpose of the proposed action is to permanently consolidate the AFC2ISRC and its divisions in a single facility on Langley AFB. The proposal would allow the Air Force to improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, facilitate the command and control of intelligence, and ensure that information sent to battlefield commanders is accurate and in near real-time. The AFC2ISRC and its divisions currently operate from five geographically separated facilities on and off Langley AFB. In 2005, competing demands for office space on Langley AFB will force a move of approximately 800 more AFC2ISRC personnel to off-base leased offices in Hampton, Virginia.

Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (183,000 square feet of interior space) and an approximate 700-vehicle parking lot in the north central portion of Langley AFB. The Air Force analyzed three potential location alternatives for construction of the AFC2ISRC facility. Construction would begin in 2008 and last approximately 30 months. In addition to the proposed action, the Air Force analyzed the no-action alternative. Under the no-action alternative, the Air Force would not construct a new facility to consolidate the AFC2ISRC and its AFTC, C2BL, and AFEO divisions on Langley AFB at this time.

Final

AIR FORCE COMMAND AND CONTROL INTELLIGENCE, SURVEILLANCE, RECONNAISSANCE CENTER (AFC2ISRC) ENVIRONMENTAL ASSESSMENT

United States Air Force
Air Combat Command

August 2005

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Environmental Assessment (EA) analyzes the potential environmental consequences resulting from the United States Air Force (Air Force) proposal to permanently consolidate the Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC) and its divisions—Air Force Transformation Center (AFTC), Command and Control Battlelab (C2BL), and Air Force Experimentation Office (AFEO)—in a single, comprehensive facility on Langley Air Force Base (AFB).

The proposal would allow the Air Force to improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, facilitate the command and control of intelligence, and ensure that information sent to battlefield commanders is accurate and in near real-time. Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (sf) with 183,000 sf of interior space and an approximate 700-vehicle parking lot in the north central portion of Langley AFB. The Air Force analyzed three potential locations for the AFC2ISRC facility construction. Construction would begin in 2008 and last approximately 30 months.

This EA has been prepared by the Air Force, Headquarters Air Combat Command (HQ ACC), in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 [Code of Federal Regulations] CFR 1500-1508), and Air Force Instruction (AFI) 32-7061, the Environmental Impact Analysis Process (EIAP), as promulgated in 32 CFR Part 989.

PURPOSE AND NEED FOR THE AFC2ISRC CONSOLIDATION

The AFC2ISRC is the lead organization that integrates and influences command and control as well as intelligence, surveillance, and reconnaissance for the Air Force. It is responsible for integrating Air Force air and space command and control, intelligence surveillance, and reconnaissance operational and delegated systems architectures, roadmaps, requirements, and standards in a continuing drive towards commonality. The AFC2ISRC mission includes development of modernization strategies, integrated mission area plans, investment plan/divestment strategies, appropriate Command and Control, Communications, Computers, and Intelligence Support Plans, and associated programming documents that ensure AFC2ISR will meet future combat challenges.

Since their inception, the AFC2ISRC and its divisions AFTC, C2BL, and AFEO have grown with increased mission responsibility, personnel, and space requirements. Currently, the AFC2ISRC and its divisions are located in four separate buildings on Langley AFB and leased office space in Hampton, Virginia. Langley AFB lacks a facility large enough to accommodate the people, equipment, and resources to permanently consolidate these functions in a single, comprehensive facility. Program

cohesion is and will continue to be difficult to achieve when personnel operate in geographically separate facilities on and off Langley AFB. Therefore, the purpose of the proposed action is to permanently consolidate the AFC2ISRC and its divisions in a single facility on Langley AFB. Implementation of the proposed AFC2ISRC consolidation would improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, facilitate the command and control of intelligence, and ensure that information sent to battlefield commanders is accurate and in near real-time.

PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Under the proposed action, the Air Force would construct a new 82,000 sf facility and an approximate 700-vehicle parking lot, with building access, in the north central portion of Langley AFB. This facility would be constructed to accommodate 1,000 occupants, support associated communications and utility needs, as well as provide adequate parking. Approximately 8.3 acres of impervious surface would be added to Langley AFB. The Air Force assessed three potential locations for the AFC2ISRC facility construction all located in the north central portion of the base. Under the no-action alternative, the Air Force would not construct a new facility to consolidate the AFC2ISRC and its three divisions on Langley AFB at this time. The AFC2ISRC and its AFTC, C2BL, and AFEO divisions would remain geographically separated on and off Langley AFB.

MITIGATION MEASURES

In accordance with 32 CFR Part 989.22, the Air Force must indicate if any mitigation measures would be needed to implement the proposed action at Langley AFB under any of the three alternative locations identified in this EA. For purposes of this EA (to construct an AFC2ISRC facility and associated parking area), wetland mitigation measures would be needed to arrive at a finding of no significant impact (FONSI) or finding of no practicable alternative (FONPA) if either Alternative A or C were implemented at Langley AFB. If either of these alternatives were chosen for AFC2ISRC facility construction, a wetland mitigation plan would be required within 90 days of a finding of no significant impact/finding of no practicable alternative signature (32 Code of Federal Regulations Part 989.22(d)).

Mitigation may be achieved through restoration, creation, or enhancement of wetlands, usually on-site or at a selected off-site location. Regulations require a minimum compensation ratio of one to one, or one unit of wetland mitigation for each unit of impact, based on the functional value of the impacted wetland. The steps for implementing a mitigation plan include the following: 1) a site selection and feasibility analysis; 2) development of a conceptual design for USACE review and approval; 3) negotiations with the USACE regarding details of the plan; 4) preparation of the design specifications; 5) contractor selection; 6) construction implementation and oversight; 7) as-built reports; 8) annual monitoring reports

issued to the USACE for a three to five year period; 9) post-construction maintenance and corrective measures; and 10) a final delineation report to demonstrate permit compliance.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category. Implementing the proposed action would not significantly affect existing conditions at Langley AFB. Table ES-1 summarizes the potential impacts for alternatives under the proposed action and the no-action alternative.

Table ES-1 Comparison of Alternatives by Resource and Potential Environmental Consequences

	Alternatives Under the Proposed Action			*No-Action Alternative*
Resource	***Alternative A: Poplar Road***	***Alternative B: Ball Field***	***Alternative C: Horse Pasture***	
Air Quality	Demolition and construction emissions would represent less than 0.01 percent for all criteria pollutants in the region, with the exception of PM_{10}. In 2008, site preparation activities would contribute 0.05 percent of PM_{10} to regional air quality.	Similar air quality effects as described for Alternative A; short-term increases in criteria pollutants during demolition and construction in years 2008 to 2010.	Similar air quality effects as described for Alternative A; short-term increases in criteria pollutants during demolition and construction in years 2008 to 2010.	No changes to existing air quality conditions would occur since the AFC2ISRC would not be constructed.
Water Resources, Water Quality, and Soils	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation which would require 12,150 cubic yards of fill.	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation which would require 15,200 cubic yards of fill.	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation which would require 15,200 cubic yards of fill.	No changes to existing water resources, water quality, and soil conditions would occur since the AFC2ISRC would not be constructed.

Table ES-1 Comparison of Alternatives by Resource and Potential Environmental Consequences				
	Alternatives Under the Proposed Action			***No-Action Alternative***
Resource	***Alternative A: Poplar Road***	***Alternative B: Ball Field***	***Alternative C: Horse Pasture***	
Biological Resources	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No changes to existing biological resources would occur since the AFC2ISRC would not be constructed.
Cultural and Traditional Resources	No architectural, archaeological, or traditional resources are known to occur in this alternative location. No impacts.	No architectural, archaeological, or traditional resources are known to occur in this alternative location. The size of the proposed facility in comparison to the historic facilities may adversely affect the character of the adjacent historic district. The proposed action may require consultation with the Virginia State Historic Preservation Office.	No architectural, archaeological, or traditional resources are known to occur in this alternative location. No impacts.	No impacts to cultural resources would occur since the AFC2ISRC would not be constructed.
Hazardous Materials and Hazardous Waste	No changes to the hazardous materials use or hazardous waste streams would occur. Demolition of buildings 1390 and 1395 would mean relocating one of two Hazardous Waste 90-Day Satellite Accumulation points on Langley AFB. In addition, examination for asbestos-containing materials and lead based paint would occur prior to any demolition and disposed of according to regulations.	No changes to the hazardous materials use or hazardous waste streams would occur.	No changes to the hazardous materials use or hazardous waste streams would occur. Demolition of the old barn would include examination for asbestos-containing materials and lead based paint. This would occur prior to any demolition and disposed of according to regulations.	No changes to existing hazardous materials and waste would occur since the AFC2ISRC would not be constructed.

Table ES-1 Comparison of Alternatives by Resource and Potential Environmental Consequences				
	Alternatives Under the Proposed Action			*No-Action Alternative*
Resource	*Alternative A: Poplar Road*	*Alternative B: Ball Field*	*Alternative C: Horse Pasture*	
Coastal Zone, Floodplains, and Wetlands	Alternative A is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 4 feet. Less than 1 percent of base wetlands would be removed, mitigation would need to occur.	Alternative B is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 5 feet. No direct effects to wetlands are anticipated.	Alternative C is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 5 feet. About 1 percent of base wetlands would be removed, mitigation would need to occur.	Because the AFC2ISRC would not be constructed, no changes to the coastal zone, floodplains, and wetlands would occur.
Socioeconomics	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	No input due to AFC2ISRC construction would occur if the facility were not constructed. No change to the regional economy would occur if the AFC2ISRC were not built.
Land Use, Visual, and Recreational Resources	Land use designation from industrial to administrative would occur – a zoning waiver from HQ ACC would be required. There would be a change to visual resources due to removal of 10.3 acres, or 4.5 percent of the base's wooded area replaced by the AFC2ISRC facility. Recreational resources would not be affected since these land uses currently do not occur in the affected area.	Land use designation from outdoor recreation to administrative would occur – a zoning waiver from HQ ACC would be required. Visual resources would also be affected by changing the ball fields into a building and parking area. There would be an impact to recreational resources due to removal of two of seven ball fields.	Land use designation from open space to administrative would occur. Future land use of the area has been identified for administrative, so no zoning waiver would be required. Visual resources would also be affected by changing the horse pasture into a building and parking area. There would be an impact to recreational resources due to removal of equestrian services.	No change in existing conditions for land management and use, visual and recreational resources if the AFC2ISRC were not built.

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

CHAPTER 1
PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force) proposes to consolidate Headquarters (HQ) Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC) into a single, comprehensive facility on Langley Air Force Base (AFB). The AFC2ISRC consists of approximately 1,000 personnel responsible for the day-to-day management of the Command and Control Intelligence, Surveillance and Reconnaissance (C2ISR) missions and functions. Divisions of the AFC2ISRC include the Air Force Transformation Center (AFTC), Command and Control Battlelab (C2BL), and Air Force Experimentation Office (AFEO). Together, these divisions are responsible for testing and modification of and experimentation with AFC2ISRC systems prior to making the new systems operational.

Currently, the AFC2ISRC and its divisions (i.e., AFTC, C2BL, and AFEO) operate from five geographically separated facilities on and off Langley AFB. The AFC2ISRC personnel currently occupy Langley AFB Buildings 661, 703, and 801; AFTC and C2BL are in Building 23. The AFEO is located in the Executive Towers in downtown Hampton, Virginia for the foreseeable future. In 2005, approximately 800 AFC2ISRC personnel will move into leased office space in the city of Hampton and the AFTC and C2BL divisions will be relocated into the recently constructed Operational Support Center (OSC) (Air Force 2002). These represent temporary moves to accommodate organizations, functions, and personnel on Langley AFB. If the Air Force implements the proposed action, the AFC2ISRC, AFTC, C2BL, and AFEO personnel would move into the new facility.

The proposed action would consolidate all divisions of the AFC2ISRC into a single, integrated unit on Langley AFB because it currently lacks an adequately sized facility to accommodate the people, equipment, and resources needed for the consolidated mission. To accomplish this consolidation, a facility with the capacity for 1,000 occupants and adequate parking would be constructed. Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (sf) with 183,000 sf of interior space and an approximate 700-vehicle parking lot on Langley AFB. To accommodate this construction footprint, the Air Force identified three sites and analyzed them as three potential alternative locations for the proposed AFC2ISRC facility (building, building access, parking area, and stormwater dry basin) on Langley AFB. In addition to the proposed action, the Air Force analyzes the no-action alternative. Under the no-action alternative, the Air Force would not construct a new facility to consolidate the AFC2ISRC and its three divisions on Langley AFB at this time. The AFC2ISRC and its AFTC, C2BL, and AFEO divisions would remain geographically separated on and off Langley AFB.

This environmental assessment (EA) has been prepared by the Air Force, Headquarters Air Combat Command (HQ ACC), in accordance with the requirements of the National Environmental Policy Act

(NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Part 1500-1508), and Air Force Instruction (AFI) 32-7061, the Environmental Impact Analysis Process (EIAP), as promulgated in 32 CFR Part 989.

1.2 BACKGROUND

Langley AFB, consisting of 2,883 acres, lies within Hampton, Virginia, in the Tidewater Virginia area (Figure 1-1). It is the oldest, continuously active air installation in the Air Force; the base host unit is the 1st Fighter Wing and is the Headquarters of Air Combat Command. The National Aeronautics and Space Administration (NASA) Langley Research Center occupies 788 acres along the western portion of the base (Figure 1-2).

In 1997, the Air Force created the Air and Space Command and Control Agency (ASC2A) under HQ ACC at Langley AFB. The ASC2A included the C2BL and Air Force Command and Control Training and Innovation Group. In 1998, the ASC2A was redesignated the Aerospace Command and Control Agency (AC2A) with an additional mission responsibility for intelligence, surveillance, and reconnaissance. In 1999, expanded mission responsibilities resulted in redesignation of the AC2A to Aerospace Command and Control & Intelligence, Surveillance and Reconnaissance Center (AC2ISRC). To support increasing requirements ranging from homeland defense to deployment planning, the AC2ISRC underwent an organizational change in 2002. The AC2ISRC became a field operating agency under HQ Air Force Warfighting Integration office and redesignated the AFC2ISRC.

The overall mission of the Air Force is defense of the United States and fulfillment of the directives of the President and Secretary of Defense. AFC2ISRC is the lead organization that integrates and influences command and control as well as intelligence, surveillance, and reconnaissance for the Air Force. It is responsible for integrating air and space command and control, intelligence surveillance, and reconnaissance with operational and delegated systems architectures, roadmaps, requirements, and standards in a continuing drive towards commonality. AFC2ISRC activities include development of modernization strategies, integrated mission area plans, investment plan/divestment strategies, appropriate Command and Control, Communications, Computers, and Intelligence Support Plans, and associated programming documents that ensure AFC2ISR will meet future combat challenges (Jacobs 2005). The overall AFC2ISRC mission is to support the Combat Air Force by providing near real-time critical support information to battlefield decision makers to increase survivability, lethality, and mission effectiveness of aircrews.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

Since their inception in 2002, the AFC2ISRC and its divisions AFTC, C2BL, and AFEO have grown with increased mission responsibility, personnel, and space requirements. Given its crucial mission, all components of the AFC2ISRC need to operate as a cohesive unit with direct day-to-day interaction and

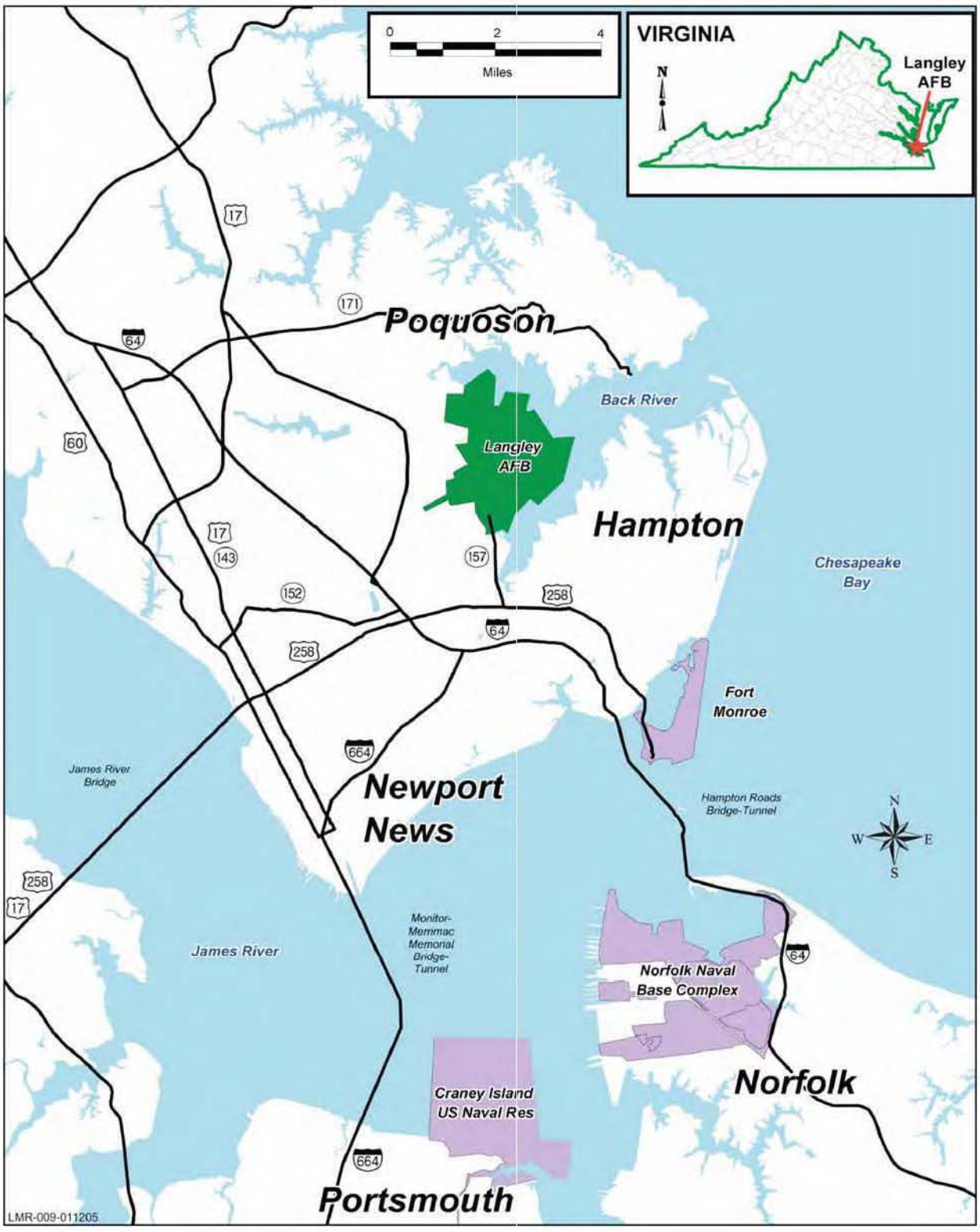

Figure 1-1 Regional Location

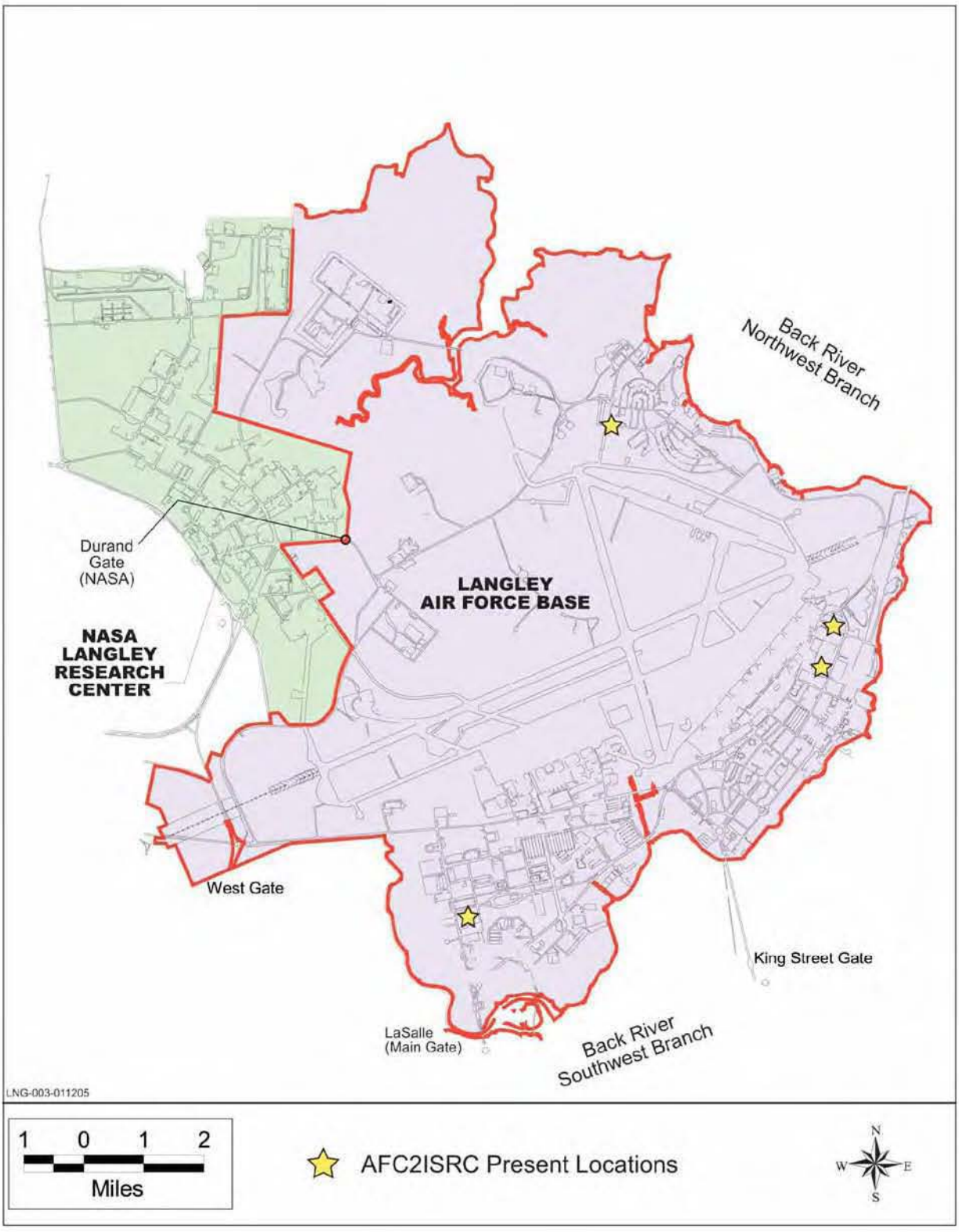

Figure 1-2 Langley AFB and NASA Langley Research Center

synergy. However, the AFC2ISRC and its divisions currently are located in four buildings (see Figure 1-2) on Langley AFB (Buildings 703, 661, 801, and a portion of 23) and leased office space in Hampton, Virginia. Langley AFB lacks an available facility large enough to accommodate the people, equipment, or resources to permanently consolidate these functions in a single, comprehensive facility (Air Force 2003a). In 2005, competing demands for office space on Langley AFB will move approximately 800 AFC2ISRC personnel into off-base leased office in the vicinity of Hampton. The AFTC and C2BL divisions, currently located in Building 23, will move into the recently constructed OSC (Air Force 2002). Program cohesion is and will continue to be difficult to achieve when personnel operate in geographically separate facilities on and off Langley AFB. The purpose of the proposed action is to permanently consolidate the AFC2ISRC and its divisions in a single facility on Langley AFB. Implementation of the proposed AFC2ISRC consolidation would improve efficiency and cohesion of the functional groups, provide the synergy between functions that housing all divisions in one facility would provide, increase security with an on-base location, and facilitate the command and control of intelligence.

CHAPTER 2

DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

This chapter describes the Air Force proposal to permanently consolidate the AFC2ISRC and its divisions (i.e., AFTC, C2BL, and AFEO) in a single, comprehensive facility on Langley AFB. Under the proposed action, the Air Force would build a new facility having a ground footprint of 82,000 sf (183,000 sf of interior space), an approximate 700-vehicle parking lot, and a 17,000-sf stormwater dry basin in the north central portion of Langley AFB. This facility would be constructed to accommodate 1,000 occupants, support associated communications and utility needs, as well as provide adequate parking and building access. In this EA, the Air Force analyzes three potential alternative locations on Langley AFB for the AFC2ISRC facility construction (Figure 2-1). In addition, the Air Force analyzes the no-action alternative under which a new facility, consolidating the AFC2ISRC and its three divisions, would not be constructed at this time. The AFC2ISRC divisions would remain geographically separated on and off Langley AFB and in 2005, competing demands for office space on Langley AFB will force a move of approximately 800 more AFC2ISRC personnel to off-base leased offices in the Hampton area.

2.1 ALTERNATIVE IDENTIFICATION PROCESS

Identification of alternative locations for the AFC2ISRC facility centered on two fundamental requirements: security and size. Because security requirements prevent the relocation of the AFTC division from moving off a military installation, the only consolidated location for the AFC2ISRC would be on Langley AFB. The size of the facility and parking requirements guided alternative siting requirements. To meet the purpose and need of consolidating three fundamental divisions of the AFC2ISRC into one consolidate group in one location, the Air Force applied the following criteria for identification of potential sites:

1. Security – The AFTC division of the AFC2ISRC requires a secured military site, therefore, construction of the AFC2ISRC needs to remain on Langley AFB.
2. Size – To accommodate 1,000 personnel, and associated communication and utility systems, the Air Force would need nearly 9 acres for the building, building access, parking lot, and stormwater basin construction.

In addition to the security and size requirements, the Air Force applied a set of overarching design principles:

- Antiterrorism Construction Standards – the AFC2ISRC would incorporate Unified Facilities Criteria (UFC) 4-010-01 (*Department of Defense Minimum Antiterrorism Standards for Buildings*);

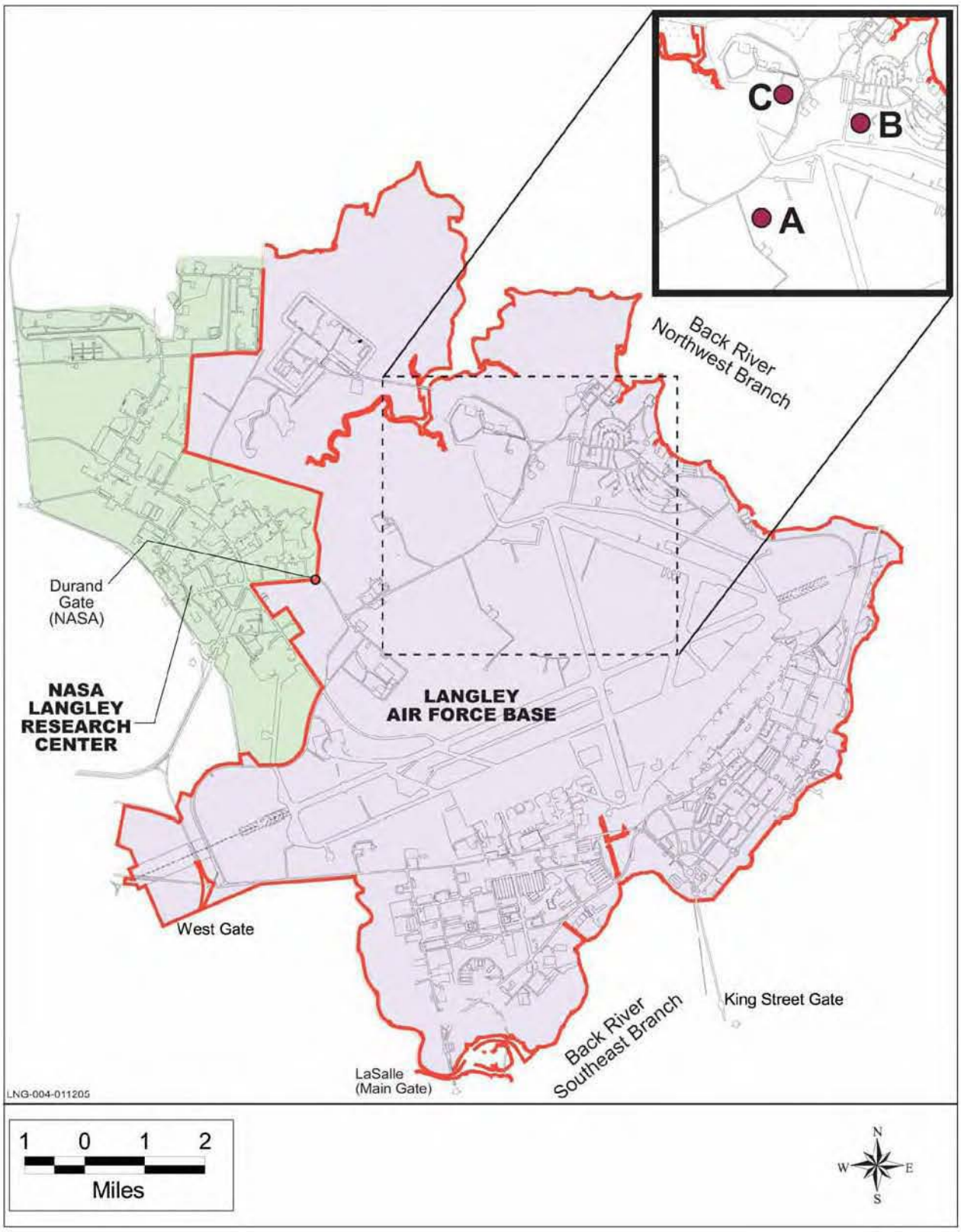

Figure 2-1 Alternative Locations under the Proposed Action

- Architectural Design Standards – the AFC2ISRC facility would reflect modern design standardization with an emphasis on sustainability and would conform to criteria in and technical guidance of Military Handbook 1190 (*Facility Planning and Design Guide*); Air Force Instruction 32-1023 (*Design and Construction Standards and Execution of Facility Construction Projects*); Air Force Handbook 32-1084 (*Facilities Requirements*); and UFC 3-600-1 (*Fire Protection Engineering for Facilities*). Objectives include low environmental impact, optimal and efficient use and reuse of materials and resources using the Leadership in Energy and Environmental Design Green Building Rating System; and
- Architectural Compatibility – the AFC2ISRC facility would reflect architecture, functional design, and quality and would be in conformance with the architectural compatibility standards for Langley AFB.

Based on the criteria and design principles, the Headquarters Site Selection Study (Air Force 2004a) and Customer Concept Document (Air Force 2004b) identified three potential sites for construction of the AFC2ISRC on Langley AFB. Each of the alternative sites is located in the north central portion of the base north of the runway. The area was selected because it had enough space to accommodate the requirements of the AFC2ISRC facility (Air Force 2003a).

- Alternative A – "Poplar Road" is located at the intersection of Weyland and Poplar Roads on a forested lot (Figure 2-2);

- Alternative B – "Ball Field" is located at the intersection of Helms Avenue and South Roma Road east of Weyland Road (Figure 2-3); and

- Alternative C – "Horse Pasture" is adjacent to the intersection of Weyland and Worley Roads (Figure 2-4).

2.2 PROPOSED ACTION

The Air Force determined that consolidating was imperative to maintain the synergy, security, and command and control that only a single location on base could provide. To meet this goal, the Air Force proposes to construct a single facility at Langley AFB, large enough to accommodate the AFC2ISRC and

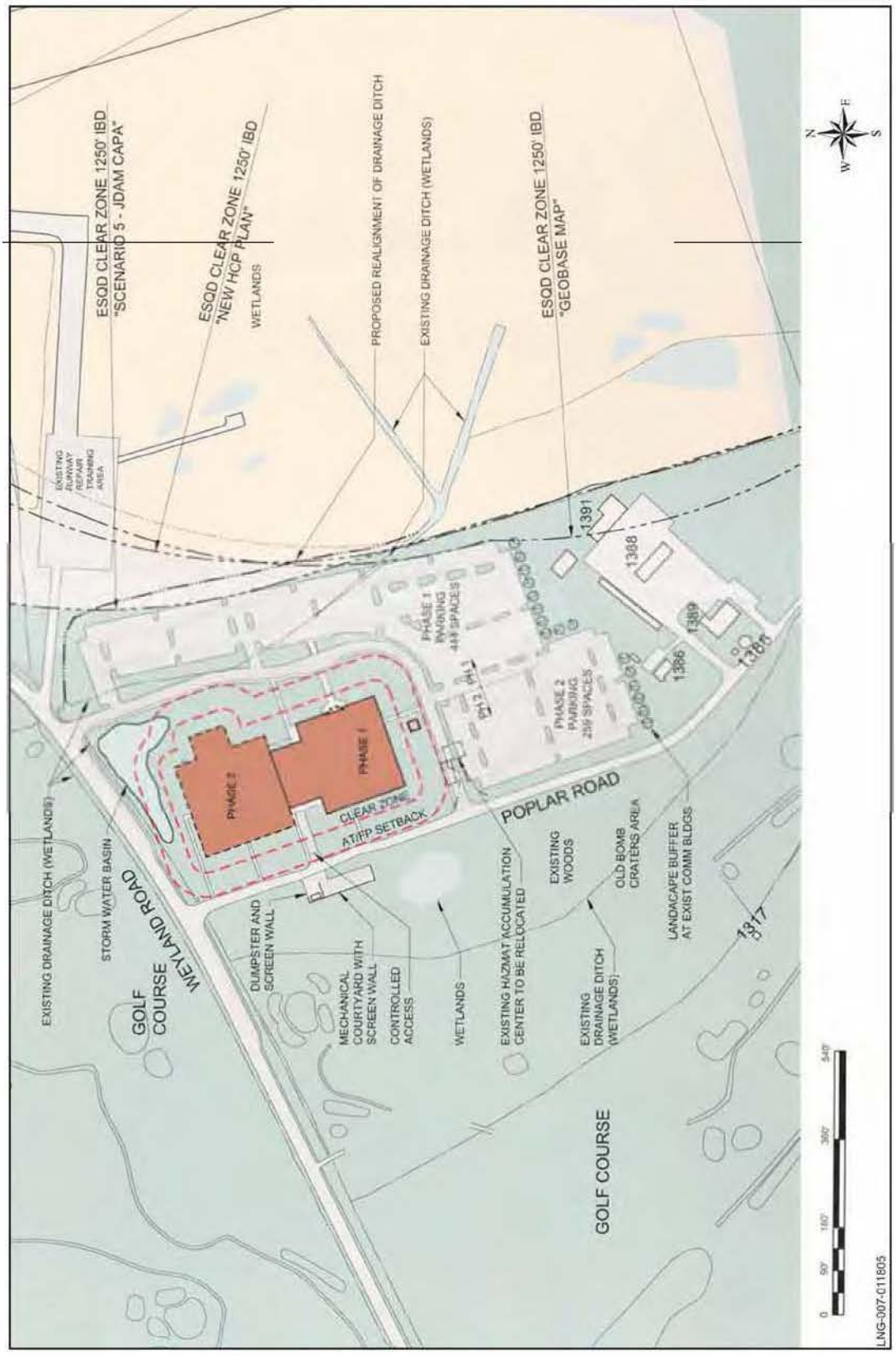

Figure 2-2
Alternative A: Poplar Road

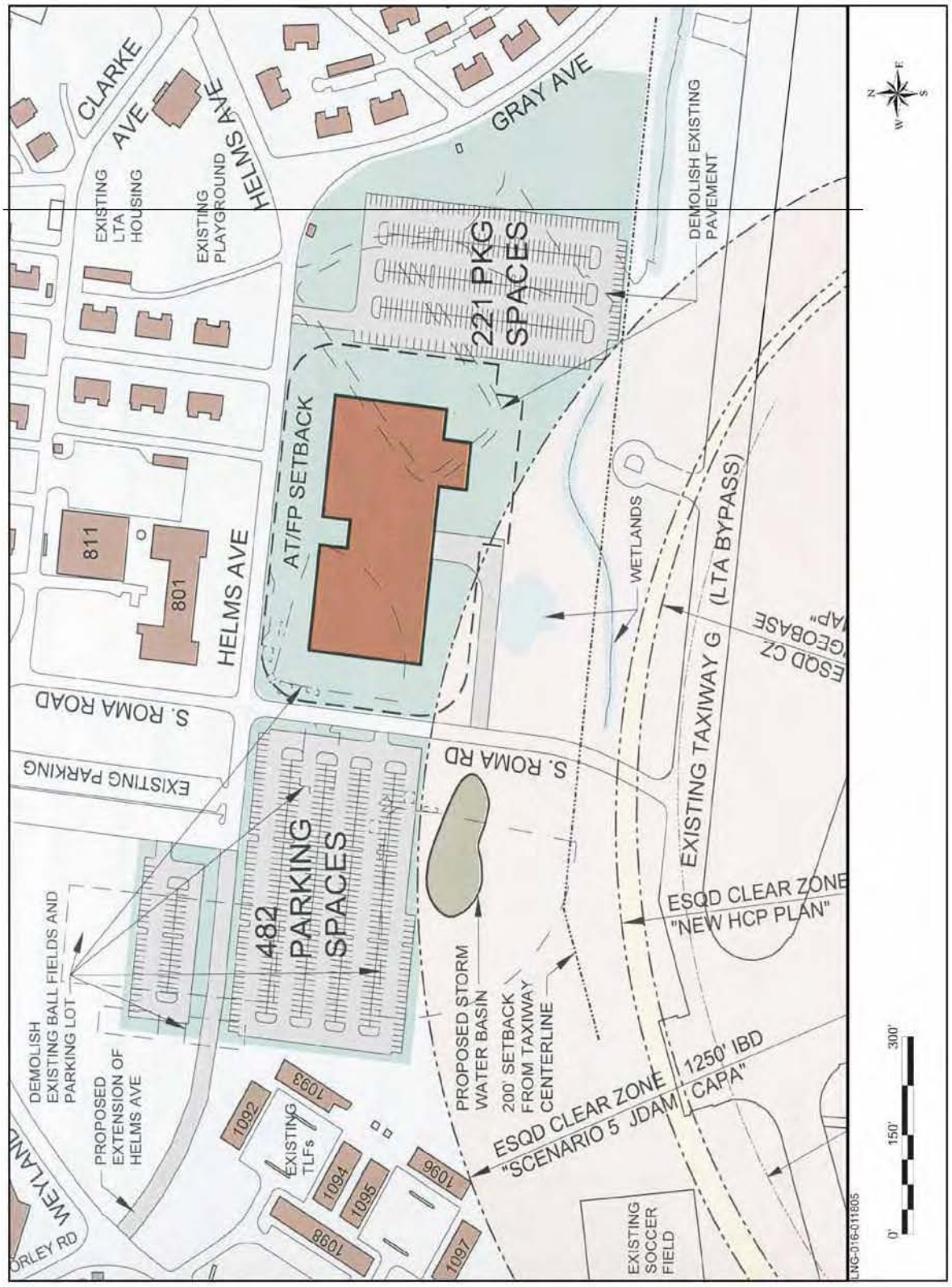

Figure 2-3
Alternative B: Ball Field

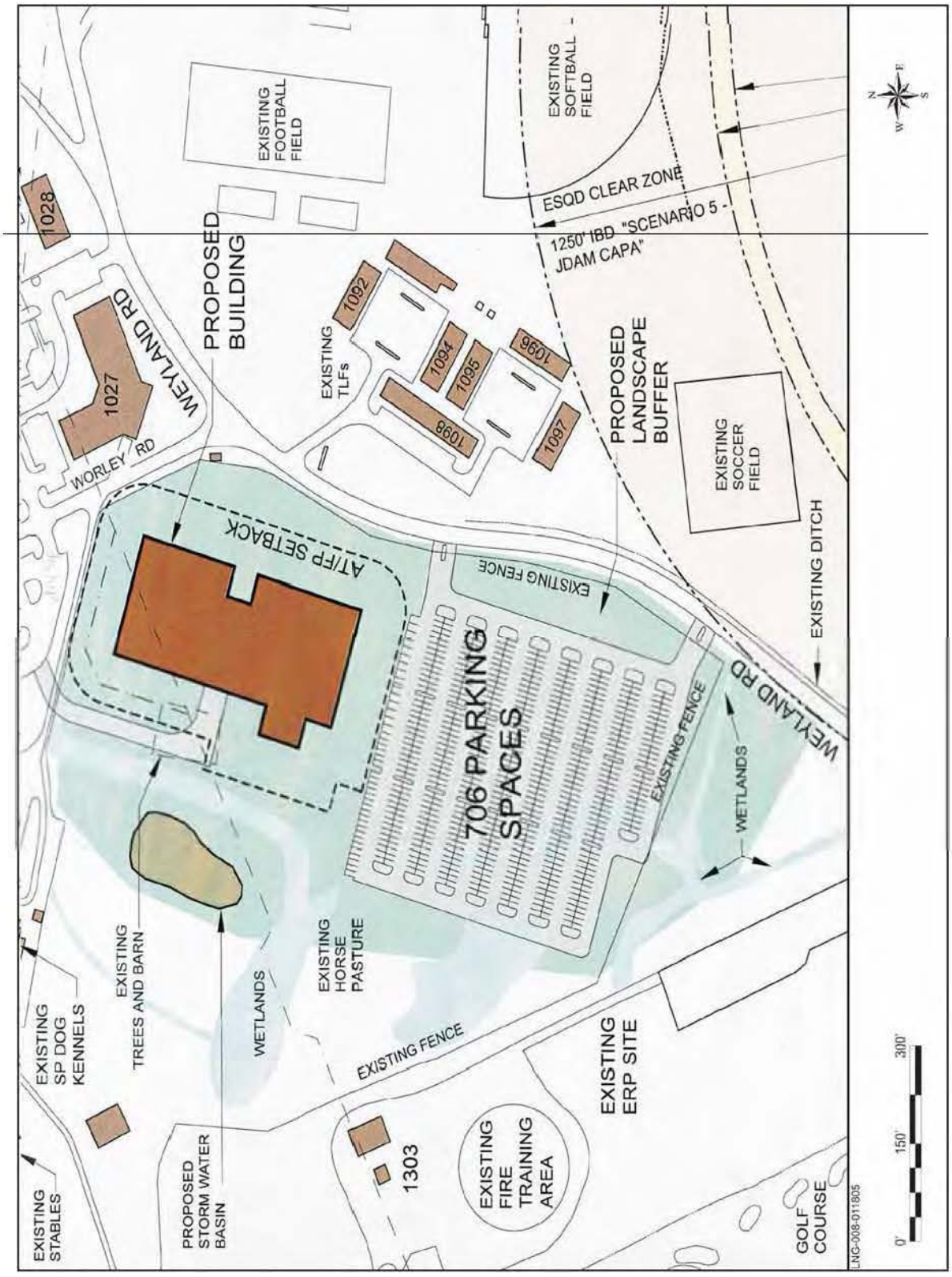

Figure 2-4
Alternative C: Horse Pasture

its divisions: AFTC, C2BL, and AFEO. Consolidation of the AFC2ISRC in one facility would provide program cohesion, reduce duplication of effort, and ensure C2ISRC information sent to battlefield commanders is accurate and in near real-time.

2.2.1 AFC2ISRC Construction

The Air Force anticipates that construction of the AFC2ISRC facility would begin in 2008 and require approximately 30 months to complete. For each of the proposed alternative sites, the size and design of the building would remain the same; however, the parking areas and stormwater detention area would vary slightly depending upon the land parcel configuration (refer to Figures 2-2 through 2-4).

The building would be constructed in two phases. Figure 2-5 provides the conceptual design of the AFC2ISRC building with exterior surfaces of brick veneer. In Phase I, a 3-story administrative building would be constructed with an attached 1½-story main services building for the mechanical, electrical, and communications systems. In Phase II, a 2-story section would connect with the main services building to complete the AFC2ISRC facility. The AFC2ISRC facility would be constructed on a ground level, reinforced concrete floor slab with supported steel beams and columns. The roof construction would consist of a metal deck supported on steel joists, beams, and columns (Air Force 2004b). The facility design would be compatible with Langley AFB architectural standards and be designed to meet the required 82-foot minimum standoff from adjacent roads and parking (UFC 4-010-01). Additional features would include interior fire detection/protection systems and exterior landscaping. The proposed building footprint (excluding building access, parking areas, and sidewalk) would occupy an area of about 82,000 sf (1.89 acres).

The parking lot design and construction would be in accordance with UFC 3-250-01FA, *Pavement Design for Roads, Streets, Walks and Open Storage Areas*. Concrete curb and gutter would be installed along the pavement edges and around the parking area islands and along the perimeter of parking areas. The proposed footprint for the parking area (includes building and road access and parking lot) would be about 280,000 sf (6.4 acres). A 17,000-sf stormwater retention area (dry basin) would also be constructed to retain stormwater generated from impervious surfaces, such as the building and parking lot (Air Force 2004b).

2.2.2 Site Preparation

Site preparation for each of the proposed action alternatives would require the building footprint to be elevated. The Federal Emergency Management Agency (FEMA) has set the 100-year floodplain at Langley AFB at 8.5 ft on the National Geodetic Vertical Datum (NGVD) 29. The Air Force would need to raise the concrete slab of the building to 9.0 ft NGVD 29 putting the raised floor of the building at 11.0 ft NGVD 29. Currently, each of the proposed alternative construction sites would require 4 to 5 ft

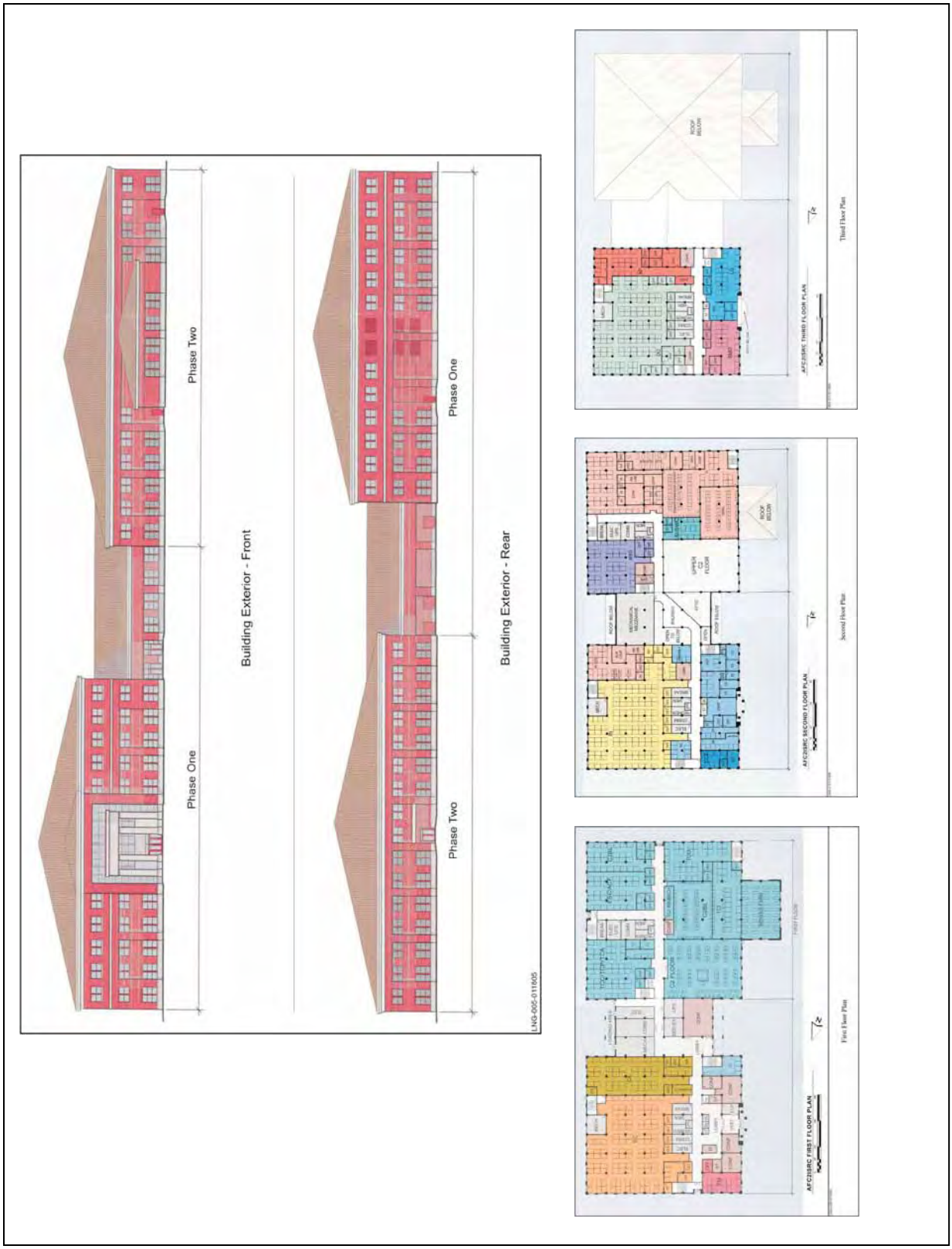

Figure 2-5 AFC2ISRC Building Conceptual Design

of fill material to achieve 9.0 ft NGVD 29. Site preparation for the proposed facilities would require the following actions (Air Force 2004a):

Alternative A – Poplar Road

- Clear the forested lot.
- Demolish Buildings 1390 and 1395, a Hazardous Waste 90-day Satellite Accumulation Point.
- Mitigate for loss of 0.5 acre of wetland.
- Elevate site approximately 4 ft – requiring approximately 12,150 cubic yards of fill.

Alternative B – Ball Field

- Demolish existing ball fields and small parking lot.
- Elevate site approximately 5 ft – requiring about 15,200 cubic yards of fill.

Alternative C – Horse Pasture

- Clear a small wooded lot and demolish existing barn.
- Mitigate for loss of 1.2 acres of wetlands.
- Elevate site approximately 5 ft – requiring about 15,200 cubic yards of fill.

2.3 NO-ACTION ALTERNATIVE

Under the no-action alternative, the Air Force would not construct a consolidated AFC2ISRC facility at Langley AFB at this time. The Air Force would continue to operate the AFC2ISRC and its divisions AFTC, C2BL, and AFEO from multiple facilities both on and off Langley AFB.

2.4 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA examines the affected environment for construction of the AFC2ISRC facility (i.e., building, building access, parking area, and stormwater dry basin) on Langley AFB. It considers the potential effects of the proposed action (Alternative locations A, B, and C), and compares those to current conditions under the no-action alternative. The steps involved in the environmental impact analysis process (EIAP) used to prepare this EA are outlined below.

1. *Conduct Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).* IICEP requires comments to be solicited from local governments as well as federal and state agencies to ensure their concerns and issues about the AFC2ISRC facility proposal are included in the analysis. It also requires that the public in the region local to the proposed action be solicited for their comments as well. In December 2005, HQ ACC sent IICEP letters to these agencies requesting their input on the proposal. Chapter 6 provides the list of people and agencies contacted and Appendix A provides copies of IICEP correspondence.

2. *Prepare a draft EA and Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA).* The first comprehensive document for public and agency review is the draft EA and FONSI/FONPA. This document examines the environmental impacts of the proposed action and no-action alternative.

3. *Announce that the draft EA and FONSI/FONPA have been prepared.* An advertisement is posted in the *Daily Press* newspaper notifying the public as to the availability of the draft EA and FONSI/FONPA for review in local libraries. After the draft EA and FONSI/FONPA were distributed, a 30-day public comment period commenced.

4. *Provide a public comment period.* The goal during this process is to solicit comments concerning the analysis presented in the draft EA and FONSI/FONPA. The public comment period extended from April 8, 2005 through June 6, 2005. Comments received from the Virginia Department of Environmental Quality have been considered and included in the final EA. No comments were received from the Virginia Department of Historic Resources, U.S. Fish and Wildlife Service, or the public.

5. *Prepare a final EA.* Following the public comment period, a final EA is prepared. This document is a revision (if necessary) of the draft EA, includes consideration of public and agency comments, and provides the decisionmaker with a comprehensive review of the proposed action and the potential environmental impacts.

6. *Issue a Finding of No Significant Impact (FONSI) / Finding of No Practicable Alternative (FONPA).* The final step in the process is either a signed FONSI/FONPA, if the analysis supports this conclusion, or a determination that an EIS would be required for the proposal.

2.5 OTHER REGULATORY AND PERMIT REQUIREMENTS

This EA has been prepared in compliance with NEPA, other federal statutes, such as the Clean Air Act (CAA), the Clean Water Act (CWA), Endangered Species Act (ESA), the National Historic Preservation Act, Executive Orders (EO), City of Hampton's Chesapeake Bay Preservation Act (CBPA), and other applicable statutes and regulations. HQ ACC has initiated informal consultation with the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Historic Resources (VDHR). Table 2-1 lists the applicable federal, state, and local regulatory requirements and potential for permit requirements if the alternatives under the proposed action were undertaken.

Table 2-1 Review and Permit Requirements		
Type of Permit or Regulatory Requirement	***Issue***	***Administering Agency***
Clean Air Act	Synthetic Minor Operating permit	Virginia Department of Environmental Quality
Virginia Water Protection Permit (Section 401)	Water quality certification. Discharge to water.	Virginia Department of Environmental Quality
Corps of Engineer (Section 404)	Required for authorizing fill within wetlands or waters of the United States	U.S. Army Corps of Engineers, Norfolk District
Endangered Species Act	Required to consult on impacts of project implementation on federally listed or proposed threatened and endangered species	U.S. Fish and Wildlife Service
State Endangered Species Act	Rare, threatened, and endangered plant and animal species	Virginia Department of Game and Inland Fisheries
Clean Water Act	Virginia Pollutant Discharge Elimination System stormwater permit	Commonwealth of Virginia Department of Conservation and Recreation
Chesapeake Bay Preservation Act	Economic development and water quality protection in Chesapeake Bay Preservation Areas	Chesapeake Bay Local Assistance Department
Virginia Stormwater Management Act and Regulations	Stormwater, Best Management Practices	Virginia Department of Conservation and Recreation/Heritage Division; Chesapeake Bay Local Assistance Department
Virginia Erosion and Sediment Control Law	Sediment Control	Virginia Department of Conservation and Recreation/Heritage Division; Chesapeake Bay Local Assistance Department
Section 106 Approval Historical/Archaeological	Archaeology, historical sites, cultural resources	Virginia Department of Historic Resources/Virginia State Historic Preservation Office
Virginia Coastal Resources Management Program; Coastal Zone Management Act of 1972	Coastal Zone Federal Consistency Review	Commonwealth of Virginia Department of Environmental Quality

2.6 MITIGATION MEASURES

In accordance with 32 CFR Part 989.22, the Air Force must indicate if any mitigation measures would be needed to implement the proposed action at Langley AFB under any of the three alternative locations identified in this EA. For purposes of this EA (to construct an AFC2ISRC facility and associated parking area), wetland mitigation measures will be needed to arrive at a finding of no significant impact (FONSI) or finding of no practicable alternative (FONPA) if either Alternative A or C were implemented at

Langley AFB. If either of these alternatives were chosen for AFC2ISRC facility construction, a wetland mitigation plan would be required within 90 days of a finding of no significant impact/finding of no practicable alternative signature (32 Code of Federal Regulations Part 989.22(d)).

Mitigation may be achieved through restoration, creation, or enhancement of wetlands, usually on-site or at a selected off-site location. Regulations require a minimum compensation ratio of one to one, or one unit of wetland mitigation for each unit of impact, based on the functional value of the impacted wetland. The steps for implementing a mitigation plan include the following: 1) a site selection and feasibility analysis; 2) development of a conceptual design for USACE review and approval; 3) negotiations with the USACE regarding details of the plan; 4) preparation of the design specifications; 5) contractor selection; 6) construction implementation and oversight; 7) as-built reports; 8) annual monitoring reports issued to the USACE for a three to five year period; 9) post-construction maintenance and corrective measures; and 10) a final delineation report to demonstrate permit compliance.

2.7 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the alternatives under the proposed action would not result in significant impacts to any resource category. Implementing the proposed action alternatives would not significantly affect existing conditions at Langley AFB. Table 2-2 summarizes the potential impacts for alternatives under the proposed action and the no-action alternative. As this summary demonstrates, none of the proposed action alternatives would result in any significant impacts.

Table 2-2 Summary of Potential Environmental Impacts

Resource	*Alternatives Under the Proposed Action* — *Alternative A: Poplar Road*	*Alternative B: Ball Field*	*Alternative C: Horse Pasture*	*No-Action Alternative*
Air Quality	Demolition and construction emissions would represent less than .01 percent for all criteria pollutants in the region, with the exception of PM_{10}. In 2008, site preparation activities would contribute .05 percent of PM_{10} to regional air quality.	Similar air quality effects as described for Alternative A; short-term increases in criteria pollutants during demolition and construction in years 2008 to 2010.	Similar air quality effects as described for Alternative A; short-term increases in criteria pollutants during demolition and construction in years 2008 to 2010.	No changes to existing air quality conditions would occur since the AFC2ISRC would not be constructed.
Water Resources, Water Quality, and Soils	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation which would require 12,150 cubic yards of fill.	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation requiring 15,200 cubic yards of fill.	Surface water would be negligibly affected by construction sedimentation and soil erosion. Stormwater basin would capture runoff and protect surface waters. No point source emissions would occur and there would be an increase of 8.3 acres of impervious surfaces. Soil composition, in an already disturbed region of the base, would be altered due to facility elevation requiring 15,200 cubic yards of fill.	No changes to existing water resources, water quality, and soil conditions would occur since the AFC2ISRC would not be constructed.
Biological Resources	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No long-term impacts to vegetation or wildlife would be expected; no threatened, endangered, or sensitive species occur in this proposed location. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.	No changes to existing biological resources would occur since the AFC2ISRC would not be constructed.

Table 2-2 Summary of Potential Environmental Consequences

Resource	*Alternatives Under the Proposed Action*			*No-Action Alternative*
	Alternative A: Poplar Road	***Alternative B: Ball Field***	***Alternative C: Horse Pasture***	
Cultural and Traditional Resources	No architectural, archaeological, or traditional resources are known to occur in this alternative location. No impacts.	No architectural, archaeological, or traditional resources are known to occur in this alternative location. The size of the proposed facility in comparison to the historic facilities may adversely affect the character of the adjacent historic district. The proposed action may require consultation with the Virginia State Historic Preservation Office.	No architectural, archaeological, or traditional resources are known to occur in this alternative location. No impacts.	No impacts to cultural resources would occur since the AFC2ISRC would not be constructed.
Hazardous Materials and Hazardous Waste	No changes to the hazardous materials use or hazardous waste streams would occur. Demolition of buildings 1390 and 1395 would mean relocating one of two Hazardous Waste 90-Day Satellite Accumulation points on Langley AFB. In addition, examination for asbestos-containing materials and lead based paint would occur prior to any demolition and disposed of according to regulations.	No changes to the hazardous materials use or hazardous waste streams would occur.	No changes to the hazardous materials use or hazardous waste streams would occur. Demolition of the old barn would include examination for asbestos-containing materials and lead based paint. This would occur prior to any demolition and disposed of according to regulations.	No changes to existing hazardous materials and waste would occur since the AFC2ISRC would not be constructed.
Coastal Zone, Floodplains, and Wetlands	Alternative A is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 4 ft. Less than 1 percent of base wetlands would be removed, mitigation would need to occur.	Alternative B is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 5 ft. No direct effects to wetlands are anticipated.	Alternative C is within the coastal zone and is located within the floodplain and would require the facility to be elevated by 5 ft. About 1 percent of base wetlands would be removed, mitigation would need to occur.	Because the AFC2ISRC would not be constructed, no changes to the coastal zone, floodplains, and wetlands would occur.
Socioeconomics	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	A short-term, positive input into the regional economy would occur during the nearly 3-year construction period. The regional economy would be capable of absorbing this short-term beneficial gain.	No input due to AFC2ISRC construction would occur if the facility were not constructed. No change to the regional economy would occur if the AFC2ISRC were not built.

Table 2-2 Summary of Potential Environmental Consequences				
	Alternatives Under the Proposed Action			***No-Action Alternative***
Resource	***Alternative A: Poplar Road***	***Alternative B: Ball Field***	***Alternative C: Horse Pasture***	
Land Use, Visual, and Recreational Resources	Land use designation from industrial to administrative would occur – a zoning waiver from HQ ACC would be required. There would be a change to visual resources due to removal of 10.3 acres, or 4.5 percent of the base's wooded area replaced by AFC2ISRC facility. Recreational resources would not be affected since these land uses currently do not occur in the affected area.	Land use designation from outdoor recreation to administrative would occur – a zoning waiver from HQ ACC would be required. Visual resources would also be affected by changing the ball fields into a building and parking area. There would be an impact to recreational resources due to removal of two of seven ball fields.	Land use designation from open space to administrative would occur. Future land use of the area has been identified for administrative, so no zoning waiver would be required. Visual resources would also be affected by changing the horse pasture into a building and parking area. There would be an impact to recreational resources due to removal of equestrian services.	No change in existing conditions for land management and use, visual and recreational resources if the AFC2ISRC were not built.

CHAPTER 3

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ANALYSIS APPROACH

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that an EA should consider, but not analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, an EA should not be encyclopedic; rather, it should be succinct. NEPA also requires a comparative analysis that allows decisionmakers and the public to differentiate among the alternatives. This EA therefore, focuses on those resources that would be affected by the proposed construction of an AFC2ISRC facility on Langley AFB, Virginia.

CEQ regulations (40 CFR Parts 1500-1508) for NEPA also require an EA to discuss impacts in proportion to their significance and present only enough discussion of other than significant issues to show why more study is not warranted. The analysis in this EA considers the current conditions of the affected environment and compares those to conditions that might occur should either of the alternatives (i.e., proposed action and no-action) be implemented.

Affected Environment

Evaluation and analysis of the proposed action indicate that resources potentially subject to ground disturbing activities have the potential to be affected. Three alternative locations for the proposed action have been identified. With the exception of air quality, the potentially affected environment centers on the north central portion of Langley AFB.

Resources Analyzed

Table 3-1 presents the results of the process of identifying resources to be analyzed in this EA. This assessment evaluates air quality; water resources, water quality, and soils; biological resources; cultural and traditional resources; hazardous materials and hazardous waste management; coastal zone, floodplains, and wetlands; socioeconomics; and land use, visual, and recreational resources. These resources are analyzed because they may be potentially affected by implementation of the proposed action alternatives.

Table 3-1 Resources Analyzed in the Environmental Impact Analysis Process		
Resource	***Potentially Affected by AFC2ISRC Facility Construction***	***Analyzed in this EA***
Air Quality	Yes	Yes
Water Resources, Water Quality, and Soils	Yes	Yes
Biological Resources	Yes	Yes
Cultural and Traditional Resources	Yes	Yes
Hazardous Materials and Hazardous Waste Management	Yes	Yes
Coastal Zone, Floodplains, and Wetlands	Yes	Yes
Socioeconomics	Yes	Yes
Land Use, Visual, and Recreational Resources	Yes	Yes
Transportation	No	No
Noise	No	No
Environmental Justice	No	No
Safety	No	No

Resources Eliminated from Further Analysis

The Air Force assessed numerous resources (refer to Table 3-1) that, in accordance with CEQ regulations, warrant no further examination in this EA. The following provides these resources and describes the rationale for this approach.

Transportation. Implementation of the proposed action (i.e., consolidating the AFC2ISRC divisions into a single facility) is not expected to affect local transportation resources. The approximately 51 persons that currently travel to a downtown Hampton facility would instead travel to Langley AFB. Second, the proposed alternative site locations are found in the north central portion of Langley AFB away from existing administrative facilities (refer to Figure 2-1) and would not change local traffic patterns in this area. Third, it is not anticipated to cause potential conflicts with base personnel using NASA's Durand Gate (See Figure 1-2) as a morning entry onto the base. Fourth, current construction on Sweeney Boulevard and West Gate modification have reduced ingress and egress traffic lanes from three to two (Air Force 2004c) resulting in larger traffic volumes through the NASA Durand Gate; however, construction at these locations will conclude in November 2005 and would not overlap with the proposed AFC2ISRC facility construction. Fifth, the 2006 LaSalle Gate modification should be completed by the time the AFC2ISRC construction would begin in 2008. In conclusion, the base contains sufficient on-base access and roadways to support the proposed construction activities without degradation of service and construction traffic would continue to use only the LaSalle Gate for base access. In addition, Langley AFB traffic studies established that local and regional road networks provide acceptable levels of service (Air Force 2003a) for base personnel. These studies also indicated that the local and regional road

networks have the capacity to accommodate the levels of additional construction traffic anticipated under the proposed action. Therefore, because of the lack of impacts to the local and regional road networks under the proposed action, transportation resources were eliminated from further analysis. For the no-action alternative, transportation would remain unchanged and remain consistent with existing conditions.

Noise. Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Under the proposed action, noise would be generated from demolition, construction, and building activities. However, the noise would be short term and intermittent, resulting in no measurable effect to the adjacent facilities. Aircraft would continue to generate average noise levels of 70 decibels (dB) to 80 dB from flyovers generally overshadowing noise from construction activities. The new AFC2ISRC building would include features to attenuate the flightline noise and ensure a safe working environment for base personnel. Normal modern construction methods and materials commonly reduce interior noise levels by 20 dB (NAS 2005). Noise generated from motor vehicles during construction would range from 40 dB (for light traffic) to 90 dB for heavy duty trucks (LHH 2005). However, these noise levels are consistent with existing conditions and would not produce noticeable impacts due to the industrial nature of the base, the potential location of all three alternative sites near the flightline, and the distance from residential areas of these three alternative sites. In summary, because the proposed action alternative locations lie adjacent to the flightline but well away from any sensitive receptors, and the facility would use construction methods and materials to ensure a safe noise environment for workers, this resource has been eliminated from future discussion. Under the no-action alternative, the existing noise environment would remain unchanged.

Environmental Justice. Environmental justice addresses the disproportionate effect of a federal action on low-income or minority populations. The existence of disproportionately high and adverse impacts depends on the nature and magnitude of the effects identified for each of the individual resources. If implementation of the proposed action were to have the potential to significantly affect people, those effects would have to be evaluated for how they adversely or disproportionately affect low-income or minority communities. Because the proposed action takes place within the confines of the base and the no-action alternative would not change existing conditions, minority or low-income groups would not be disproportionately affected by implementation of the proposed action. Therefore, environmental justice was eliminated from further analysis in this EA.

Safety. Effects to human safety related to demolition and construction would be minimal and no different from standard, on-going activities occurring at Langley AFB. During demolition and construction, prescribed industrial safety standards would be followed. There are no specific aspects of demolition or construction operations that would create any unique or extraordinary safety issues. Each of the proposed alternative construction sites is located outside of the explosive safety quantity distance (ESQD) clear zone and the inhabited building distance (IBD) clear zones. Standards for implementation of safe

distances between non-explosive related facilities and personnel from weapons-loaded aircraft are found in Department of Defense (DoD) 6055.9-Std, *DoD Ammunition and Explosives Safety Standards* and Air Force Manual (AFMAN) 91-201, *Explosive Safety Standards*. Since no aspect of the project proposal or the no-action alternative would alter the safety conditions for any of the alternative sites, this resource has been eliminated from further analysis.

3.2 AIR QUALITY

Air quality in a given location is described by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors including the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions.

The 1970 Clean Air Act (CAA) and its subsequent amendments (CAAA) established the National Ambient Air Quality Standards (NAAQS) for seven "criteria" pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 and 2.5 microns (PM_{10} and $PM_{2.5}$), and lead (Pb). These standards, presented in Table 3-2, represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects.

Based on measured ambient criteria pollutant data, the U.S. Environmental Protection Agency (USEPA) designates all areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the National Ambient Air Quality Standards (NAAQS). The CAA requires each state to develop a State Implementation Plan (SIP) that is its primary mechanism for ensuring that the NAAQS are achieved and maintained within that state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants. The CAA provides that federal actions in nonattainment and maintenance areas will not hinder future attainment with the NAAQS and must conform to the applicable SIP (i.e., Virginia SIP).

The CAA also establishes a national goal of preventing degradation or impairment in federally-designated Class I areas. Class I areas are defined as those areas where any appreciable degradation in air quality or associated visibility impairment is considered significant. As a part of the Prevention of Significant Deterioration (PSD) Program, Congress assigned mandatory Class I status to all national parks, national wilderness areas (excluding wilderness study areas or wild and scenic rivers), and memorial parks greater than 5,000 acres. In Class I areas, visibility impairment is defined as atmospheric discoloration (such as from an industrial smokestack) and a reduction in regional visual range. Visibility impairment or haze results from smoke, dust, moisture, and vapor suspended in the air. Very small particles are either formed

Table 3-2 State and National Ambient Air Quality Standards

	Virginia Standards			*National Standards*	
POLLUTANT	AVERAGING TIME	PRIMARY	SECONDARY	PRIMARY	SECONDARY
Ozone (O_3)[A]	1 Hour[B]	235 µg/m^3 (0.12 ppm)	Same as Primary	235 µg/m^3 (0.12 ppm)	Same as Primary
	8 Hour	0.08 ppm	Same as Primary	0.08 ppm	Same as Primary
Carbon Monoxide (CO)	1 Hour	40 mg/m^3 (35 ppm)	--	40 mg/m^3 (35 ppm)	--
	8 Hour	10 mg/m^3 (9.0 ppm)	--	10 mg/m^3 (9.0 ppm)	--
Nitrogen Dioxide (NO_2)	Annual Average	100 µg/m^3 (0.053 ppm)	Same as Primary	100 µg/m^3 (0.053ppm)	Same as Primary
	24 Hour	--	--	--	--
Sulfur Dioxide (SO_2)	Annual Average	80 µg/m^3 (0.03 ppm)	--	80 µg/m^3 (0.03 ppm)	--
	24 Hour	365 µg/m^3 (0.14 ppm)	--	365 µg/m^3 (0.14 ppm)	--
	3 Hour	--	0.5 ppm	--	0.5 ppm
Particulate Matter PM_{10}	Annual Arithmetic Mean	50 µg/m^3	Same as Primary	50 µg/m^3	Same as Primary
	24 Hour	150 µg/m^3	Same as Primary	150 µg/m^3	Same as Primary
Particulate Matter $PM_{2.5}$[C]	Annual Arithmetic Mean	15 µg/m^3	Same as Primary	15 µg/m^3	Same as Primary
	24 Hour	65 µg/m^3	Same as Primary	65 µg/m^3	Same as Primary
Lead (Pb)	Calendar Quarter	1.5 µg/m^3	Same as Primary	1.5 µg/m^3	Same as Primary
Total Suspended Particulates (TSP)	Annual Geometric Mean	75 µg/m^3	60 µg/m^3	--	--
	30 Day	--	--	--	--
	7 Day	--	--	--	--
	24 Hour	260 µg/m^3	150 µg/m^3	--	--

[A] USEPA promulgated new federal 8-hour ozone standards on April 15, 2004.
[B] 1-hour standards will be revoked as of April 2005.
[C] USEPA promulgated new PM standards and announced final nonattainment designated areas in December 2004.

from gases (sulfates, nitrates) or are emitted directly into the atmosphere from sources like electric utilities, industrial fuel burning processes, and vehicle emissions.

Stationary sources, such as industrial areas, are typically the issue with visibility impairment in Class I areas, so the permitting process under the PSD program requires a review of all Class I areas within a 62-mile (100-kilometer) radius of a proposed industrial facility. Mobile sources, including aircraft and their operations at Langley AFB, are generally exempt from review under this regulation. While the review under the PSD permit program does not apply directly to base operations at Langley AFB, this analysis assessed a 62-mile radius area as a screening tool for reviewing potential visibility impacts.

Pollutants considered in the analysis for this EA include the criteria pollutants measured by state and federal standards. These include volatile organic compounds (VOCs), which are precursors (indicators of) ozone (O_3), nitrogen oxides (NO_x), which are also precursors to O_3 and include NO_2 and other compounds (CO and PM_{10}). Airborne emissions of $PM_{2.5}$, lead (Pb), and hydrogen sulfide (H_2S) are not addressed because the affected environment (i.e., Langley AFB) contains no significant sources of these

criteria pollutants, it is not located within a nonattainment area for these pollutants, nor are these pollutants associated with the proposed action construction activities and no-action alternative.

3.2.1 Affected Environment

The affected environment varies according to pollutant. For pollutants that do not undergo a chemical reaction after being emitted from a source (PM_{10}, CO, and SO_2), the affected area is generally restricted to a region in the immediate vicinity of the base. However, the region of concern for O_3 and its precursors (NO_x and VOCs) is a larger regional area (i.e., the Hampton Roads Air Quality Control Region [AQCR]) because they undergo a chemical reaction and change as they disperse from the source. This change can take hours, so depending upon weather conditions, the pollutants could be some distance from the source. Another factor used in defining the affected environment is mixing height. Mixing height is the upper vertical limit of the volume of air in which emissions may affect air quality. Emissions released above the mixing height become so widely dispersed before reaching ground level that any potential ground-level effects would not be measurable. Emissions of pollutants released below the mixing height may affect ground-level concentrations. The portion of the atmosphere that is completely mixed begins at the earth's surface and may extend up to altitudes of a few thousand feet. Mixing height varies from region to region based on daily temperature changes, amount of sunlight, and other climatic factors. An average mixing height of 4,000 ft conservatively characterizes the conditions at Langley AFB and its vicinity. This mixing height was derived from a review of historical data (USEPA 1972) and a detailed analysis of morning and afternoon mixing heights at a nearby upper air monitoring station in Wallops Island, Virginia (USEPA 2000). Impacts of the proposed action can be evaluated in the context of the existing local air quality, the baseline emissions for the base and region, and the relative contribution of the proposed action to regional emissions.

Base Environment. The Virginia Department of Environmental Quality (DEQ) has primary jurisdiction over air quality and sources of stationary source emissions at Langley AFB. Stationary source emissions at Langley AFB under baseline conditions (and under no-action) include jet engine testing (off the aircraft), degreasing, storage tanks, fueling operations, heating and power production, solvent use, and surface coating. Emissions from stationary sources constitute a small fraction of overall base emissions, as shown in Table 3-3 below. Estimates for all criteria pollutants demonstrate that maximum potential base-wide emissions from stationary sources are less than the CAA Title V threshold with the exception of NO_x. However, actual emissions are significantly less than the potential emissions (Air Force 2000). Therefore, the base has applied for, and received, a Synthetic Minor Operating permit from the state of Virginia. This operating permit effectively caps the base's emissions by imposing federally-enforceable emission limits, ensuring the base's status as a Minor Stationary Source.

Mobile source emissions include aircraft operations (takeoffs and landings), aerospace ground equipment, ground support equipment, and aircraft maintenance operations performed with the engines still mounted

Table 3-3 Baseline Emissions for Langley AFB Affected Environment					
Base Emissions Source Category	***Pollutants (Tons/Year)***				
	CO	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*
Stationary Sources	14.5	33.1	29.8	1.0	4.5
Mobile Sources	760.9	104.5	241.2	5.6	8.2
TOTAL Base Emissions	775.4	137.6	271.0	6.6	12.7

Source: Air Force 2000.

on the aircraft (engine run-ups and trim checks). Emissions from aircraft takeoffs and landings, as well as other flight operations at the base, considered all based and transient aircraft. Aircraft emissions were calculated for all flight activities below the mixing height (4,000 ft). These emissions, combined with those from the other mobile sources, account for the majority of the emissions at the base.

Regional Environment. Langley AFB is located in the Hampton Roads Intrastate AQCR. This AQCR includes four counties (York, James City, Isle of Wright, and Southampton) as well as nine independent cities (Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg). This area includes substantial industry, several military and commercial airfields, and a large population that generates emissions. Table 3-4 summarizes the regional emissions (stationary and mobile) of criteria pollutants and precursor emissions for the Hampton Roads Intrastate AQCR.

Table 3-4 Regional Emissions for Langley AFB Affected Environment					
Regional Emissions	***Pollutants (Tons/Year)***				
	CO	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*
Hampton Roads AQCR	257,325	79,750	83,560	95,515*	42,659*

Sources: Commonwealth of Virginia 1996; *USEPA 2004.

Air quality in this AQCR has been designated as either in "attainment" or "unclassifiable/attainment" with the NAAQS for all pollutants except the new 8-hour ozone standard. USEPA in its April 2004 determination found the Hampton Roads AQCR to be in nonattainment for the 8-hour ozone (USEPA 2003) effective June 15, 2004. Hampton Roads AQCR has until June 2007 to reach attainment (USEPA 2004).

The Hampton Roads AQCR inventory for CO, VOCs, and NO_x was obtained from the Virginia SIP Revision (i.e., maintenance plan) and includes stationary point source emissions, on-road mobile sources, off-road mobile sources, and area sources. Point source emissions include stationary source emissions from Langley AFB and other military and industrial sources in the area. On-road mobile source emissions include emissions from vehicular-related activities from on-road motor vehicles that are registered to use public roadways and utilize gasoline or diesel fuels. This category includes the contribution of off-base use of private and government vehicles associated with military and civilian personnel at Langley AFB. Off-road mobile sources include aviation emissions, locomotive emissions, and marine vessels. Aviation and marine vessels include both commercial and military sources. Area

source emissions include those from solvent/coating use, vehicle refueling, as well as combustion emissions from heating of industrial, commercial, and residential facilities.

3.2.2 Environmental Consequences

Proposed Action

The CAA prohibits federal agencies from supporting activities that do not conform to a SIP that has been approved by the USEPA. To assess the affects of the proposed action, analysis must include direct and indirect emissions from all activities that would affect the regional air quality. Emissions from proposed actions are either "presumed to conform" (based on emissions levels which are considered insignificant in the context of overall regional emissions) or must demonstrate conformity with approved SIP provisions.

The air quality analysis for the proposed action at Langley AFB quantifies the changes (increases and decreases) due to activities associated with construction of the AFC2ISRC facility at any of the three alternative locations (Alternatives A, B, and C). The largest construction footprint was used for these calculations to ensure a conservative evaluation. This approach was adopted because the three alternative locations:

- occur in the same north central location within Langley AFB,
- fall under the same AQCR, and
- generally affect the same size construction footprint.

Since personnel numbers would not change and the commuting distances would remain relatively the same, personal vehicle emissions would not affect projected emissions under any of the proposed action alternative locations. In addition, these emissions are already subsumed in the Hampton Roads Intrastate AQCR total emissions presented in Table 3-4.

The emissions associated with the proposed action include fugitive dust (PM_{10}) from fill, grading, and combustion (primarily CO and NO_x, and smaller amounts of VOCs, SO_x, and PM_{10}) and from heavy-duty diesel construction equipment exhaust (e.g., trucks, dozers, cranes, and rollers). Demolition and construction emissions estimates were based on the two phases of facility construction using the Air Force Air Conformity Applicability Model (ACAM) software (Air Force 2005). During both phases it was assumed that trucks hauling materials would be covered and travel on paved roads, and that exposed surfaces and soil piles would be watered twice daily to minimize fugitive dust. During Phase I, demolition (including building and tree removal and grubbing) would occur during the first 3 months, and facility construction (building, building access, parking area, and stormwater dry basin) would follow over the next 14 months for a Phase I total of 17 months; grading would take place during the first 5 months over 10 acres and the next 12 months would include construction of the facility. During Phase II, construction would occur over a 13-month period with grading taking place over 3 months on 4 acres, and

facility construction over the next 10 months. A more detailed description of the assumptions is provided in Appendix B.

Table 3-5 summarizes emissions during the demolition and construction phases under any of the three alternative locations from 2008 through 2010.

Table 3-5 Projected Pollutant Emissions

	Pollutants (Tons/Year)				
	CO	***VOCs***	***NO_x***	***SO_2***	***PM_{10}***
2008	34	2	12	1	25
2009	46	3	15	2	7
2010	15	1	5	1	0
***De Minimis* Threshold**	**N/A**	**100**	**100**	**N/A**	**N/A**

Source: ACAM 4.0.3 (Air Force 2005)

Under any of the proposed action alternative locations, emissions from construction and demolition, for any of the criteria pollutants, would be well below *de minimis* thresholds established by the federal general conformity rule and would conform with the Virginia SIP. For all criteria pollutants, the proposed action would contribute less than 0.01 percent of the total emissions in the AQCR, with the exception of PM_{10} in 2008. In this year, the heaviest grading activities would occur and PM_{10} emissions would contribute 0.05 percent to the regional air quality.

Impacts to air quality associated with the proposed demolition and construction would be short-term; no long-term emissions would occur. The impacts of fugitive dust would be minimized through implementation of dust control measures (i.e., water application on soil) as outlined in Code of Virginia regulations 9 VAC 5-50-60 *et seq.* of the regulations for the *Control and Abatement of Air Pollution*. Even though it is not anticipated that there will be open burning, Langley AFB would follow the requirements for permitting found under 9 VAC 5-40-5600 *et seq*. In conclusion, building the AFC2ISRC at any of the three alternative locations (A, B, or C) would not result in adverse effects if the proposed action were implemented. Emissions at the base during demolition and construction would increase; however, they would be short-term, well below the regional thresholds, and therefore, regionally insignificant.

No-Action Alternative

Under the no-action alternative, the Air Force would not construct a new AFC2ISRC facility at Langley AFB at this time. Impacts to this resource would not be expected since baseline emissions (as described under the affected environment, Table 3-3) would remain unchanged, therefore, implementing the no-action alternative would not result in adverse effects to the regional air quality.

3.3 WATER RESOURCES, WATER QUALITY, AND SOILS

Water resources refer to surface and subsurface water, including lakes, ponds, rivers, and streams within a watershed affected by existing and potential soil erosion and runoff from the base. Subsurface water, commonly referred to as groundwater, is typically found in areas known as aquifers. Groundwater is typically recharged during precipitation events and is withdrawn for domestic, agricultural, and industrial purposes. The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the CWA is to restore and maintain the integrity of the nation's waters.

3.3.1 Affected Environment

Langley AFB is located entirely within the Chesapeake Bay watershed (refer to Figure 1-1). The base occupies a flat lowland peninsula with a gentle eastward slope of 1 foot per mile and elevations of 5 to 11 ft above mean sea level within the Atlantic Coastal Plain physiographic province. The hydrogeologic units at Langley AFB occur in the following descending order: the Water Table Aquifer; the Yorktown Confining Unit; the Yorktown-Eastover Aquifer; the Eastover-Calvert Confining Unit; and the Chickahominy Point Aquifer. Langley AFB is bordered to the northeast by the Northwest Branch of the Back River, and to the southeast by the Southwest Branch of the Back River (refer to Figure 1-2). The Back River is estuarine and primarily saline in nature.

Langley AFB is serviced by a stormwater drainage system that discharges to the Back River and its tributaries: Brown Creek, Tides Mill Creek, Kiln Creek, and Tabbs Creek. Surface water also may drain to these water bodies. The closest surface water to Alternatives B and C is the Northwest Branch of the Back River, which is approximately 0.25 miles (1,320 ft) north of Alternative C and northeast of Alternative B. Alternative A is located approximately 0.75 miles (3,960 ft) southwest of the Back River. All three proposed alternative sites drain to the Northwest Branch of the Back River. Stormwater drainage is carried by a series of pipes, box culverts and open ditches to 53 outfalls with 26 outfalls associated with areas that contain industrial operations (personal communication, Goss 2005). Due to the flat relief of the area, standing water accumulates during heavy storm events. Stormwater runoff from parking lots and aircraft parking aprons has the potential to carry spilled oil, grease, hydraulic fluid, and jet fuel to outfalls that discharge into the Southwest Branch and Northwest Branch of the Back River.

The USEPA has granted local National Pollutant Discharge Elimination System (NPDES) permitting authority to the Virginia Department of Environmental Quality (VDEQ) under the Virginia Pollutant Discharge Elimination System (VPDES). The base is currently under VPDES Permit No. VA0083194, which expires on May 1, 2010. The recently updated VPDES permit identifies effluent limitations and requires semi-annual sampling and management of runoff and sediment and erosion control. Releases

will be monitored by 10 outfalls for effluent discharge under the installation's VPDES permit and tracked and reported to the appropriate regulatory agencies as they occur (personal communication, Goss 2005).

Soils in this region are mostly unconsolidated fluvial, marine, and estuarine deposits underlain by beach sands, sandy clays, and gravels from the Tabb and Lynnhaven formations. Land moving and filling activities at Langley AFB have altered soil profiles to the extent that site soils profiles do not concur with local soil surveys from adjacent counties (Air Force 1998). However, the presumed dominant soil of the area encompassing the three alternative sites is the Tomotley soil series (Air Force 1998, Air Force 2001). These soils consist of moderate to poorly drained, dark gray fine sandy loam soils that formed in alluvium derived from limestone and sandstone.

3.3.2 Environmental Consequences

Proposed Action

There would be negligible impacts on surface water features at Langley AFB from the proposed action at any of the alternative location sites. The first floor elevation of the building would be raised above the level of the 100-year flood, altering the site topography and soil composition. Because upland development activities at any of the proposed sites would disturb more than 2,500 sf, the Air Force would prepare an Erosion and Sediment Control Plan required for a Virginia Coastal Resources Management Program (VCRMP) Resource Protection Area. Measures would also be taken to minimize the amount of erosion and sediment transport off site in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq*.). Furthermore, because site development at any of the proposed alternative sites would disturb more than 1 acre of land, the Air Force would prepare a Stormwater Management Plan (SMP) in accordance with Virginia's Stormwater Management Law (Virginia Code 10.1-603.5) and Regulations (4 VAC 3-20-20 *et seq*.) and applicable federal nonpoint source pollution mandates. Since more than 5 acres would be disturbed by development at any of the proposed sites, a VPDES Stormwater General Permit would be required. Langley AFB currently operates under and is in compliance with its VPDES permit issued by VDEQ. A stormwater basin at each of the proposed sites would capture runoff and protect surface waters. Operations under the proposed action at any of the proposed alternative sites would not involve a point source emission or affect the status of Langley AFB's permit.

Alternative A – Poplar Road

Overall, the amount of impervious surfaces would increase as a result of the proposed action to develop at this location. The building footprint of nearly 1.9 acres (i.e., 82,000 sf) and an additional 6.4 acres of pavement (parking area, building access, and sidewalks) would add an additional 8.3 acres of impervious surfaces to the base. To elevate the building footprint approximately 4 ft to meet Virginia floodplain

requirements would require approximately 12,150 cubic yards of fill. A stormwater detention pond (i.e., dry basin) would be constructed to the west or northeast of the building to detain stormwater generated from these impervious surfaces. Figure 2-2 (refer to Chapter 2) shows the locations of the proposed building, sidewalks, and parking/access areas. Impacts on water quality from erosion and sedimentation would be minimized during site development by implementing the SMP and adhering to construction permit requirements. There would be no impacts to water resources from point source or non-point sources with implementation of Alternative A under the proposed action.

Alternative B – Ball Field

Overall, the amount of impervious surfaces would be increased as a result of the proposed action to develop at this alternative site. The 82,000 sf building footprint and an additional 280,000 sf of pavement would add an additional 362,000 sf (8.3 acres) of impervious surfaces to the base. To elevate the building footprint approximately 5 ft to meet Virginia floodplain requirements would require approximately 15,200 cubic yards of fill. A stormwater detention pond would be constructed to the southwest of the building to detain stormwater generated from impervious surfaces, such as the building and parking area. Figure 2-3 (refer to Chapter 2) provides the location of the proposed building and surface pavement under this alternative location. Impacts on water quality from erosion and sedimentation would be minimized during site development by implementing the SMP and adhering to construction permit requirements. There would be no impacts to water resources from point source or non-point sources with implementation of Alternative B under the proposed action.

Alternative C – Horse Pasture

Overall, the amount of impervious surfaces at the site would be increased as a result of the proposed action to develop the land at this site. As indicated under Alternatives A and C, the 82,000 sf building footprint and an additional 280,000 sf of pavement would add an additional 362,000 sf (8.3 acres) of impervious surfaces to the base. To elevate the building footprint approximately 5 ft to meet Virginia floodplain requirements would require approximately 15,200 cubic yards of fill. A detention pond would be constructed to the west of the building to detain stormwater generated from impervious surfaces, such as the building and parking lot. Figure 2-4 (refer to Chapter 2) shows the locations of the proposed building and parking lots. Impacts on water quality from erosion and sedimentation would be minimized during site development by implementing the SMP and adhering to construction permit requirements. There would be no impacts to water resources from point source or non-point sources with implementation of Alternative C under the proposed action.

No-Action Alternative

Under the no-action alternative, none of the proposed sites would be developed. Existing conditions (as described under the affected environment) would remain unchanged. As a result, there would be no impacts on ground water, surface water, or soils at Langley AFB.

3.4 BIOLOGICAL RESOURCES

Biological resources encompass plant and animal species and the habitats within which they occur. Plant species are often referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there (Hall *et al.* 1997). Biological resources for this EA include vegetation, wildlife, and special-status species occurring on Langley AFB in the vicinity of the proposed action.

Vegetation includes all existing upland terrestrial plant communities and submerged aquatic vegetation (SAV), with the exception of special-status species. The affected environment for vegetation includes those areas subject to demolition and construction disturbance. Wetlands are discussed in Section 3.7, *Coastal Zone, Floodplains, and Wetlands*.

Wildlife includes all vertebrate animals with the exception of those identified as threatened or endangered or sensitive. Wildlife includes fish, amphibians, reptiles, birds, and mammals.

Special-Status Species are defined as those plant and animal species listed as threatened, endangered, or proposed as such by the USFWS. The federal ESA protects federally listed, threatened, and endangered plant and animal species. Species of concern are not protected by the ESA; however, these species could become listed and protected at any time. Their consideration early in the planning process could avoid future conflicts that might otherwise occur. The discussion of special-status species focuses on those species with the potential to be affected by demolition, construction, and construction-related noise. Commonwealth of Virginia species of concern are also discussed.

3.4.1 Affected Environment

The affected environment for the three alternative sites analyzed under the proposed action includes a mix of open areas and forested uplands. The open areas are maintained as grassy fields for recreation in Alternative B, or primarily as open pasture in Alternative C. Alternative A is almost entirely forested comprising approximately 4.5 percent of the forested areas on the base. The site has minimal ground improvements and open areas, providing a relatively high wildlife habitat potential. Species typically found in this type of forested area include loblolly pine, southern red oak, white oak, willow oak, black cherry, sweet gum, red maple, tulip poplar, and hickory.

Vegetation. Although much altered by three centuries of human disturbance, temperate broadleaf deciduous forest is the predominant natural vegetation over much of Virginia and the eastern United States. Langley AFB lies within the southeastern evergreen forest region, which includes Virginia's southeastern corner and is primarily associated with the outer Coastal Plain. Much of the historic, native vegetative cover has been removed from Langley AFB, and the majority of the base consists of managed lawns and landscaped areas composed of ornamental trees and shrubs and developed areas of buildings, structures, and pavement. However, there are some naturally forested uplands with pockets of salt marsh vegetation and inland wetland communities as well.

Only remnant patches of native upland forest vegetation are currently found within the base. A total of 8 percent (230.6 acres) of the base is forested or in its natural state (Air Force 1998). Most of the upland vegetation occurs in the vicinity of Tabbs Creek and the Munitions Storage Area in the northeastern portion of Langley AFB. The woodland areas are dominated with either pine or sweet gum, and all are second growth, characteristic of old field succession and growth since federal acquisition of the land. The wooded areas contain little forest of marketable size, quantity, or quality. The sub-canopy is composed of species such as the flowering dogwood, holly, sassafras, mulberry, and sweet bay. The shrub layer, or under-story, composition varies depending on the site. Species at this level include: wax myrtle, bayberry, common elderberry, Hercules' club, blueberry greenbrier, Japanese honeysuckle, Virginia creeper, poison ivy, muscadine grape and lespedeza, and high tide bush. Exotic species, such as privet are also present in the under story. The vegetative layer consist of late throughwort, dog fennel, mistflower, velvet panic grass, deer-tongue panic grass, tall goldenrod, and Terrell grass, among others (Air Force 1998).

The largest areas of marsh are located along Tabb Creek and the Northwest Branch of the Back River. The marsh area is characterized by seven plant communities including: cord grass, dwarf cord grass, saltmeadow hay, salt grass, rush, marsh elder, and salt brush. Species distribution is dependant on salinity, drainage, slope, substrate, elevation, and tidal inundation (Air Force 2004d).

Turf and landscaped open areas comprise a major portion of the main base. Developed areas are primarily paved or turf. Ground cover in these areas is dominated by Bermuda Grass and Tall Fescue. Minor species present are Dallis grass, Crabgrass, Orchard grass, and Blue grass. Most of these cover types are groomed to an average height of 2 to 3 inches. Vegetative cover common to the semi-improved portions of the base includes Bermuda grass, Tall Fescue, Lespedeza, and Dallis grass. Main base open fields are mowed to a height of 3 to 5 inches.

Wildlife. Wildlife on the base are wide-spread species that are habitat generalists or tolerant of disturbance and include a wide variety of game and fur-bearing animals, small mammals, waterfowl, songbirds, raptors, amphibians, reptiles, and fish. The proximity of the base to estuarine and marine habitats of Chesapeake Bay provides habitat for a variety of neotropical migrants and waterfowl.

Important native mammals expected to be found near forested areas on base include white-tailed deer, raccoon, red fox, gray and fox squirrels, Virginia opossum, and various species of small rodents. Mammals that frequent open grassland areas include various species of shrews, moles, the meadow jumping mouse, meadow vole, eastern cottontail rabbit, and striped skunk. Open grassland areas are also important foraging areas for various species of bats known to inhabit the region. Reptiles, which may inhabit the wetland communities, include the six-lined racerunner, eastern hognose snake, black racer, the black rat snake, and the canebrake rattlesnake. Wetland invertebrate inhabitants include crabs, oysters, and clams.

Common breeding birds include Carolina chickadee, tufted titmouse, wood thrush, cardinal, red-eyed vireo, several species of wood warbler, carolina wren, summer tanager, northern flicker; red-bellied woodpecker; screech owl, and red-shouldered hawk. Songbirds typical of the tidal wetland/salt marsh community include Ipswich sparrow, Savanna sparrow, redwing blackbird, American crow, and fish crow. Shore birds are also found in this community and may include plovers, turnstones, willets, sanderlings, gulls, terns, sandpipers, yellow-legs, and herons. Waterfowl that may use this community include canvasbacks, ruddy ducks, greater and lesser scaups, bufflehead, redhead, common golden-eye, blue-winged teal, double-crested cormorant, and American coot. Characteristic game birds include Wild Turkey; Northern Bobwhite, and Mourning Dove (Air Force 1998). Birds that frequent open field areas include abundant and more generalist species, such American robin, European starling, American crow, common grackle, and Brown-headed cowbird.

Special-Status Species. The USFWS identifies federal and state listed species of concern potentially occurring at Langley AFB. Table 3-6 identifies the species of concern that could occur within a 50-mile radius of Langley AFB (USFWS 2004).

In 1996, the Virginia Department of Conservation and Recreation conducted a site survey of Langley AFB and identified no state special-status species or habitat. On July 1 1997, the Virginia Department of Conservation Resources (VDCR) issued a letter indicating that the VDCR biologists identified two (bird and plant) species designated as state rare at Langley AFB: the northern harrier and eastern bloodleaf. Northern harriers live and breed in coastal marshes and migrate to Virginia during the winter months. The eastern bloodleaf is a wetland species. No federally listed threatened or endangered species are known to exist on Langley AFB, although bald eagles feed and forage in the surrounding waters and tidal flats. The state endangered canebrake rattlesnake is not known to exist on Langley AFB.

Table 3-6. Federally Listed, Proposed, and Candidate and Species of Concern (State and Federal) Within a 50-Mile Radius of Langley AFB			
		Status	
Common Name	***Scientific Name***	***Federal***	***State***
Vertebrates			
Mabee's Salamander	*Ambystoma mabeei*	-	T
Canebrake Rattlesnake	*Crotalus horridus*	-	E
Northern Diamond-Backed Terrapin	*Malaclemys terrapin terrapin*	SOC	
Birds			
Forster's Tern	*Sterna forsteri*		SOC
Caspian Tern	*Sterna caspia*		SOC
Least Tern	*Sterna antillarum*	-	SOC
Great Egret	*Ardea alba egretta*	-	SOC
Yellow-crowned Night Heron	*Nyctanassa violacea violacea*		SOC
Glossy Ibis	*Plegadis falcinellus*		SOC
Piping Plover	*Charadrius melodius*	LT	T
Bald Eagle	*Haliaeetus leucocephalus*	LT	E
Peregrine Falcon	*Falco peregrinus*	LE(S/A)	E
American Peregrine Falcon	*Falco peregrinus anatum*	LE	T
Northern Harrier	*Circus cyaneus*	-	SOC
Invertebrates			
Northeastern Beach Tiger Beetle	*Cincidela dorsalis dorsalis*	LT	C
Plants			
Pondspice	*Litsea aestivalis*	SOC	-
Harper's fimbristylis	*Fimbristylis peusilla*	SOC	-
Eastern bloodleaf	*Iresines rhizomatosa*	-	G5T3
Virginia least trillium	*Trillium pusillum var. virginiaum*	-	G3T2

LT – Listed Threatened
LE – Listed Endangered
EX – Believed to be extirpated in Virginia
E (S/A) – Endangered due to similarity of appearance to a Federally listed species
SOC – Species of Concern (those species that have been identified as potentially imperiled or vulnerable throughout their range).
C – Candidate (The state has enough information to list the species as threatened or endangered but this action is precluded by other listing activities).
Global Rank – the species rarity throughout its total range.
G1 – extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals' or because of some factor(s) making it especially vulnerable to extinction.
G2 – very rare and imperiled with 6 to 20 occurrences of few remaining individuals; or because of some factor(s) making it vulnerable to extinction.
G3 – either very rare and local throughout its range or found locally (abundantly at some of its locations) in a restricted range; or vulnerability to extinction because of other factors. Usually fewer than 100 occurrences are documented.
G__T__ - signifies the rank of subspecies or variety. For example G5T1 would apply to a subspecies of a species that is demonstrably secure globally (G5) but the subspecies warrants a rank of T1, critically imperiled.
Source: USFWS 2004; VDGIF 2005

3.4.2 Environmental Consequences

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource: 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) the sensitivity

of the resource to proposed activities; and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas or disturbances cause reductions in population size or distribution of a species of concern. Analysis of potential on-base impacts focuses on whether and how ground-disturbing activities and changes in the noise environment may affect biological resources.

Proposed Action

Alternative A – Poplar Road

Development at this location would result in the removal of 10.3 acres of forest, which amounts to approximately 4.5 percent of the forested areas on base. The primary affected canopy species include loblolly pine, various oaks, sweet gum, and maple. Wildlife present in the forest with limited home ranges would likely be lost as a result of site development. This forested upland habitat, although unique to the base, is relatively common outside the base. Forest species likely to be affected by the site development are locally abundant in the region and the overall ecological effect would, therefore, be minor. In addition to the removal of the forest at this site, approximately 800 ft of the existing drainage ditch to the east would be realigned approximately 150 ft further east, bordering the proposed site development. Silt screens and other sediment control measures would be implemented to minimally affect the existing drainage ditch. The realignment of the ditch would displace disturbance-tolerant wildlife species occupying this wetland habitat for the duration of construction period. It is expected that these species would repopulate the realigned ditch at its new location, or potentially at the proposed stormwater basin to the west of the site. However, species unique to the riparian edge habitat created by the existing drainage, between the open area to the east and forested area to the west, would likely not return due to the disappearance of the riparian edge. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken.

Although the forested area of Alternative A could potentially provide suitable habitat for nesting or long-term roosting of the bald eagle, no nesting or long-term roosting has ever been observed on base (Air Force 1998). Therefore, no special-status species are known or are likely to occur at the forested site, thus the proposed action at Alternative A would have no effect on threatened or endangered species, or other special-status species. Because impacts are anticipated to be minor with the implementation of Alternative A, it is anticipated that vegetation, wildlife, and special-status species would not be significantly affected.

Alternative B – Ball Field

Under this alternative, birds that frequent the existing recreational fields would likely relocate to the adjacent open fields to the south during site development. The nearby wetland depression and drainage ditch to the south are maintained by mowing, removing any potential for habitat value, and would likely be minimally affected by the adjacent site development.

No special-status species are known or are likely to occur at the recreation fields, thus the proposed action would have no effect on threatened or endangered species, or other special-status species under Alternative B. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken. Because no impacts associated with the implementation of the proposed action at Alternative B are expected, it is anticipated that vegetation, wildlife, and special-status species would not be significantly affected.

Alternative C – Horse Pasture

The environmental setting at Alternative C includes open grasslands, wooded and riparian areas, and wetlands, providing a varied habitat to a diverse group of species. Nearly 17 of the 30 leased acres (see section 3.9.2) are maintained as open pasture for horses, and it is expected that impacts associated with site development would only minimally affect wildlife. Birds that frequent the existing pasture would likely relocate nearby to the adjacent open fields of the golf course to the southwest or to the recreational fields to the east and southeast.

No special-status species are known or are likely to occur at Alternative C, thus the proposed action would have no effect on threatened or endangered species, or other special-status species. The state endangered canebrake rattlesnake is not known to exist on Langley AFB; however, should any be encountered during demolition or construction activities, appropriate measures to minimize impacts to the species would be taken. Because impacts are anticipated to be minimal with the implementation of Alternative C, it is anticipated that vegetation, wildlife, and special-status species would not be significantly affected.

No-Action Alternative

No significant effects to vegetation, wildlife, or special-status species are anticipated through implementation of the no-action alternative (as described under the affected environment).

3.5 CULTURAL AND TRADITIONAL RESOURCES

Cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural resources or properties. Archaeological resources are places where people changed the ground surface or left artifacts or other physical remains (e.g., arrowheads or bottles). Archaeological resources can be classed as either sites or isolates and may be either prehistoric or historic in age. Isolates often contain only one or two artifacts, while sites are usually larger and contain more artifacts. Architectural resources are standing buildings, dams, canals, bridges, and other structures. Traditional cultural properties are resources associated with the cultural practices and beliefs of a living community that link that community to its past and help maintain its cultural identity. Traditional cultural properties may include archaeological resources, locations of historic events, sacred areas, sources of raw materials for making tools, sacred objects, or traditional hunting and gathering areas.

3.5.1 Affected Environment

Archaeological Resources

A comprehensive archaeological resources overview produced a base sensitivity map which indicated that most of Langley AFB had been disturbed by construction or other impacts (Air Force 2004d). The Virginia Department of Historic Resources (VDHR) concurred that archaeological resources were absent in those areas subjected to systematic shovel testing, and that an archaeological survey would not be required for areas covered by existing runways, roads, parking lots, and certain existing buildings. They indicated, however, that additional survey of areas identified as having moderate or low archaeological potential might be necessary in the future (Air Force 2004d). Thirteen archaeological sites have been identified within the base or on the base border with NASA; none are within the area of affected environment of the proposed action.

Architectural Resources

Architectural surveys at Langley AFB have identified an area encompassing the Lighter-Than-Air, Heavier-Than-Air, and airfield areas as eligible for the National Register of Historic Places as a potential Langley Field Historic District. Historic District resources (ca. 1917 to 1945) illustrate the evolution of construction within the Army Air Corps and are associated with the development of Langley Field, the Army Air Corps, and NASA. Of the 379 Air Force buildings and structures in the potential district, 285 are contributing resources (Air Force 2004d). VDHR has concurred with the proposed district boundary and list of contributing and non-contributing building resources (Air Force 2004d). Property types include aircraft operations facilities; administration, residential, and recreational facilities; wind tunnels; laboratories; runways; taxiways; road systems; and landscape features. None of these structures lie within the area of affected environment for the alternatives under the proposed action.

Traditional Resources

Some Native American resources have been identified at Langley AFB in the northern portion of the base (Baie 2005). Based on consultation with the Virginia Council on Indians, no federally recognized Indian tribes or lands are located in Virginia (Air Force 2004d).

3.5.2 Environmental Consequences

Proposed Action

No impacts to archeological or architectural resources would be expected since none occur in the area of affected environment for the alternatives under the proposed action. No impacts to cultural or traditional resources would be expected as none have been identified at Langley AFB. The base is not in possession of tribal human remains, funerary objects, sacred objects, or objects of cultural patrimony (Air Force 2004d). The character of the historic district adjacent to Alternative B could be adversely affected due to the size of the proposed facility in comparison to the historic facilities.

Alternative A – Poplar Road

Under Alternative A, Buildings 1395 and 1390 would be demolished. These buildings have no architectural significance (Air Force 2004d) and therefore, no impacts would occur to architectural properties. In conclusion, no impacts to archaeological, architectural, or traditional cultural resources or properties would be expected. However, in the event that archaeological resources are discovered during any demolition or construction activity, Langley AFB would implement the standard Air Force procedures in AFI 32-7065, *Cultural Resources Management Program* for unanticipated archaeological discoveries and notification.

Alternative B – Ball Field

No impacts to archaeological, architectural, or traditional cultural resources or properties would be anticipated from implementation of the proposed action at this alternative site. However, in the event that archaeological resources are discovered during any demolition or construction activity, Langley AFB would implement the standard Air Force procedures in AFI 32-7065, *Cultural Resources Management Program* for unanticipated archaeological discoveries and notification. The character of the adjacent historic district could be adversely affected due to the size of the proposed facility in comparison to the historic facilities.

Alternative C – Horse Pasture

Under Alternative C, an existing barn would be demolished but it is not of architectural significance (Air Force 2004d). No impacts to archaeological, architectural, or traditional cultural resources or properties

would be anticipated from implementation of this alternative. However, in the event that archaeological resources are discovered during any demolition or construction activity, Langley AFB would implement the standard Air Force procedures in AFI 32-7065, *Cultural Resources Management Program* for unanticipated archaeological discoveries and notification.

No-Action Alternative

Under the no-action alternative, no ground disturbance from construction of a new AFC2ISRC facility would occur. Negligible impacts to cultural resources as a result of ongoing activities at Langley AFB would be expected.

3.6 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); the Occupational Safety and Health Act (OSHA); and the Emergency Planning and Community Right-to-Know-Act. Resource Conservation and Recovery Act (RCRA) defines hazardous waste as any solid, liquid, contained gaseous or semisolid waste, or any combination of waste that could or do pose a substantial hazard to human health or the environment. Hazardous materials have been identified in AFI 32-7086, *Hazardous Materials Management*, to include any substance with special characteristics that could harm people, plants, or animals when released. Waste may be classified as hazardous because of its toxicity, reactivity, ignitability, or corrosiveness. In addition, certain types of waste are "listed" or identified as hazardous in Code of Federal Regulations at 40 CFR Part 261.

Asbestos-containing material (ACM) is any material containing more than one percent by weight of asbestos and can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure. Asbestos is made up of microscopic bundles of fibers that may be airborne when distributed or damaged. These fibers get into the air and may be inhaled into the lungs, where they may cause significant health problems. Due to its availability to withstand heat, fire, and chemicals, asbestos was historically used in construction materials, and is typically found in ceiling tiles, pipe and vessel insulation, floor tile, linoleum, mastic, and on structural beams and ceilings. Laws which address the health risks of exposure to asbestos and ACMs include Toxic Substance Control Act (TSCA), OSHA regulations (29 CFR), and CAA (Section 112 of the CAA, as amended, 42 USC § 7401 *et seq*.). USEPA regulations concerning asbestos are contained in 40 CFR 61. The regulations require that the USEPA or authorized state agencies be notified of asbestos removal projects. The 1st Fighter Wing *Asbestos Management and Operations Plan* provides guidance on the management of asbestos (Air Force 2004e).

Lead-based paint (LBP) was commonly used from the 1940s until the 1970s for exterior and interior painted surfaces. In 1978, the U.S. Consumer Product Safety Commission lowered the legal maximum

lead content in most kinds of paint to trace amounts, therefore, buildings constructed after 1978 are presumed not to contain LBP. The use and management of LBP is regulated under Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992. Section 1017 requires the implementation of federally supported work involving risk assessments, inspection, interim controls, and abatement of lead-based paint hazards. Regulations relating to LBP can be found at 29 CFR, 40 CFR, and 49 CFR. Guidance for administrative and operations plans for managing lead-base paint-containing materials at Langley AFB is provided in the *Lead-Based Paint Management and Operations Plan* (Air Force 2003b).

3.6.1 Affected Environment

Operations at Langley AFB require the use and storage of many hazardous materials. These materials include flammable and combustible liquids, acids, corrosives, caustics, anti-icing chemicals, compressed gases, solvents, paints, paint thinners, pesticides, petroleum hydrocarbons, hydraulic fluids, fire retardant, and photographic chemicals.

The Langley AFB *Hazardous Waste Management Plan* (HWMP) specifies protocols for storage locations on the base and proper handling procedures for all hazardous substances (Air Force 2003c). Protocols described in the HWMP include spill detection, spill reporting, spill containment, decontamination, and proper cleanup and disposal methods. Hazardous waste is generated at Langley AFB from a variety of activities, including aircraft maintenance, wastewater treatment, soil and groundwater remediation, training exercises, civil engineering projects, printing, medical facility, services, and security. Aircraft support functions are a major source of hazardous waste at Langley AFB. These functions include hydraulics, structural maintenance, aerospace ground equipment, munitions maintenance, corrosion control, fuels management, painting, and wheel and tire maintenance.

The USEPA designates facilities as large quantity generators of hazardous waste when wastes generated exceed 2,200 pounds any month during the year. Langley AFB is a large-quantity hazardous waste generator. In keeping with the requirements outlined in the Langley AFB HWMP, hazardous waste is properly segregated, stored, characterized, labeled, and packaged for collection at a designated initial satellite accumulation point. The base has approximately 45 waste accumulation points at work locations. A licensed contractor transports the waste from the accumulation points to one of two designated 90-day Hazardous Waste Storage Areas (HWSA) where they are stored until disposal is economically practicable or before 90 days has expired, whichever comes first. A licensed disposal contractor picks up the wastes and transports it off base for disposal in a licensed disposal facility. Accumulated wastes gathered at a 90-day HWSA are analyzed, characterized, prepared for shipment, and forwarded to the Defense Reutilization and Marketing Office in Norfolk, which is responsible for arranging permanent disposal (Air Force 2003c).

Langley AFB has a proactive program to identify asbestos and lead in all structures in order to reduce potential hazards to occupants, workers, and the environment during future construction projects. The presence of asbestos in a facility or specific portion of a facility is determined following an inspection by qualified Bio-Environmental Engineering personnel in coordination with the Asbestos Program Officer or through a contracted service. An asbestos survey is conducted whenever maintenance, repair, or minor construction could result in exposure to ACMs. Survey results for ACM and LBP materials are available in the Civil Engineering Squadron building in the Environmental Flight office.

The environmental restoration program (ERP) is the process by which contaminated sites and facilities are identified and characterized and by which existing contamination is contained, removed, and disposed of to allow for beneficial reuse of the property. ERP sites include landfills, underground waste fuel storage areas (e.g., oil/water separators), and maintenance-generated wastes. Compliance activities for ERP sites address underground storage tanks, hazardous materials management, closure of active sites, polychlorinated biphenyls, water discharges, and other compliance projects that occur on or near ERP sites. Since the ERP began at Langley AFB, 47 sites have been identified on the base; one additional ERP site has been identified at Bethel Manor Housing. Eleven sites are currently regulated under the CERCLA (Tice 2004). The active ERP sites at Langley AFB are shown in Figure 3-1.

3.6.2 Environmental Consequences

The significance of potential impacts associated with hazardous materials and wastes is based on the toxicity, transportation, storage, and disposal of these substances. Hazardous materials and hazardous waste impacts are considered significant if the storage, use, transportation, or disposal of these substances substantially increases the human health risk or environmental exposure. An increase in the quantity or toxicity of hazardous materials and/or hazardous waste handled by a facility may also signify a potentially significant impact, especially if a facility was not equipped to handle the new waste streams.

Proposed Action

Alternative A – Poplar Road

Buildings 1390 and 1395, constructed in the early 1990's would be demolished under this alternative. No impacts to asbestos-containing materials or lead-based paint would be expected under this alternative. However, in the event that asbestos or lead-based paint would be encountered during demolition of the 90-day Satellite Accumulation Point buildings, the materials would be disposed of by a certified contractor in accordance with the Langley AFB HWMP (Air Force 2003c). Any hazardous waste removed from the proposed action site would be properly coordinated by base personnel and would be handled according to all applicable Air Force, local, state, and federal rules and regulations.

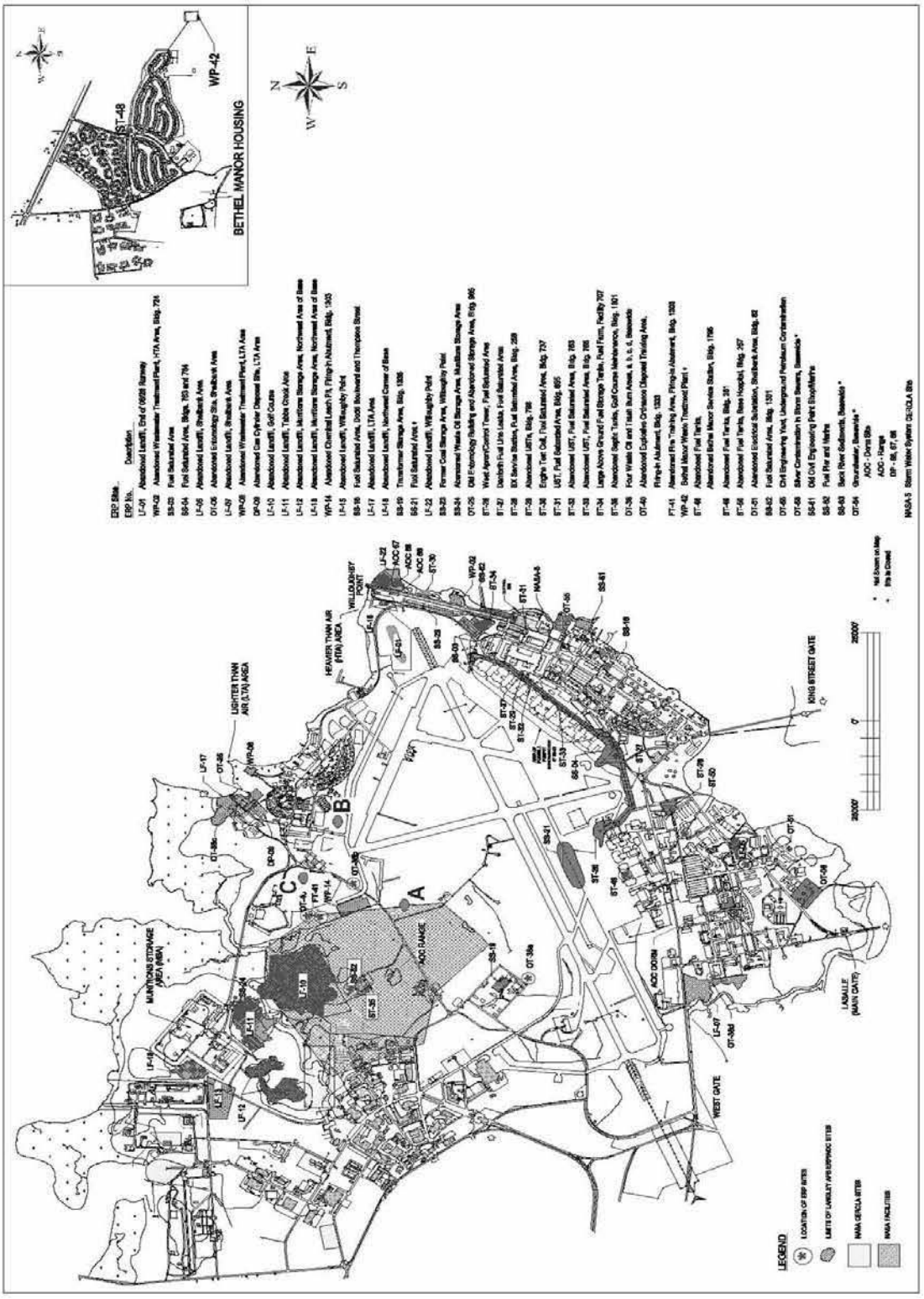

Figure 3-1 Langley AFB ERP Sites

Disposal of asbestos-containing materials would be in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640) and transported in accordance Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). Disposal of any lead-based paint would be in accordance with Virginia Lead-Based Paint Activities, Rules and Regulations (9 VAC 20-60-261). Uncontaminated construction debris would be disposed of off-site at the Bethel Sanitary Landfill or incinerated at the Hampton Steam Generation Plant (Air Force 2004f).

The Air Force has not selected a new location for the placement of this second 90-day Satellite Accumulation Point on Langley AFB at this time. Once the location has been identified, appropriate environmental documentation would be obtained prior to establishment of a new site. Because no new waste streams would be created, there would be no increase of existing waste streams, and hazardous materials would not change at the base, it is anticipated that no adverse impacts to this resource would be expected under implementation of the proposed action at this alternative site.

The location of Alternative A is within the Langley AFB ERP area of concern (AOC) Range. The AOC Range was added to the Langley AFB ERP list in 1999 when it was determined that a former bombing range was located where the base golf course currently exists. Contaminates are presumed to be ordnance and explosive waste (Air Force 2003d). Because the site is within the AOC, precautions would be required to prevent water runoff from impacting the ERP site and potentially affecting the waters of the Back River.

Alternative B – Ball Field

Because no new waste streams would be created or increase and hazardous materials would not change at the base, it is anticipated that no adverse impacts to this resource would be expected under implementation of Alternative B. No impacts to asbestos-containing materials or lead-based paint would be expected under this alternative. Discovery of contaminated soils at the site are not anticipated; however, should contaminated soils be encountered during site preparation, they would be addressed consistent with local, state, and federal regulations. No-long term significant impacts would be expected from implementation of the proposed action at this location. No known contamination exists at this site. No adverse impacts would be anticipated should implementation of the proposed action occur at this site.

Alternative C – Horse Pasture

No impacts to asbestos-containing materials or lead-based paint would be expected under this alternative. However, an existing barn would be demolished. In the event that asbestos or lead-based paint would be encountered during demolition of the structure, the materials would be disposed of by a certified contractor in accordance with the Langley AFB HWMP (Air Force 2003c). Any hazardous waste removed from the site would be properly coordinated by base personnel and would be handled according

to all applicable Air Force, local, state, and federal rules and regulations. Disposal of asbestos-containing materials would be in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640) and transported in accordance Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 *et seq.*). Disposal of any lead-based paint would be in accordance with Virginia Lead-Based Paint Activities, Rules and Regulations (9 VAC 20-60-261). Uncontaminated construction debris would be disposed of off-site at the Bethel Sanitary Landfill or incinerated at the Hampton Steam Generation Plant (Air Force 2003c). In addition, since no new waste streams would be created or increase and hazardous materials would not change at the base, it is anticipated that no adverse impacts to this resource would be expected under implementation of Alternative C.

An abandoned fire training area, ERP Site 41 (FT-41 on Figure 3-1), is adjacent to this site. The ERP site was used from the 1960s to 1984 and added to the ERP list in 1981. Used oils, fuels, and solvents were dumped and then burned at the site. Although this is still an active ERP site, no adverse impacts from implementation of the proposed action at this alternative site would be anticipated provided procedural guidelines developed by the ERP manager in conjunction with base civil engineers and the EPA were followed to ensure the ERP site integrity is maintained.

No-Action Alternative

Under the no-action alternative, no construction, demolition, fill or grading operations would occur at any of the proposed alternative sites on Langley AFB at this time. Langley AFB would continue to generate hazardous wastes (as described under the affected environment for this resource); however none would be expected through implementation of this alternative.

3.7 COASTAL ZONE, FLOODPLAINS, AND WETLANDS

The *Coastal Zone* includes those lands governed by the VCRMP, pursuant to the Coastal Zone Management Act (CZMA) of 1972. The VCRMP outlines land and water use programs within Virginia's coastal zone which includes 83 jurisdictions, 29 counties, and 15 cities within eastern Virginia, including the city of Hampton. Virginia's coastal zone also includes its coastal waters of the United States territorial sea, extending to the 3-mile (4.8-kilometer [km]) limit of Virginia sovereignty. Federal lands such as Langley AFB are statutorily excluded from Virginia's coastal zone. However, federal approval of the VCRMP triggers Section 307 of the CZMA and mandates that activities on federal lands that have the potential to affect coastal resources or uses on non-federal lands comply to the maximum extent practicable with the enforceable policies of the VCRMP. The enforceable policies outlined in the VCRMP include: fisheries management, sub-aqueous lands management, wetlands management, dunes management, non-point source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management (i.e., Chesapeake Bay Preservation Act). Consistency

with the VCRMP is achieved by obtaining all applicable permits and approvals required under the Enforceable Programs of the VCRMP prior to commencing the project.

Floodplains are, in general, those lands most subject to recurring floods, situated adjacent to rivers and streams, and coastal areas. As a topographic category, a floodplain is quite flat and lies adjacent to the stream or river; geomorphologically, it is a landform composed primarily of unconsolidated depositional material derived from sediments being transported by the related stream or river; hydrologically, it is best defined as a landform subject to periodic flooding by a parent stream or river. Floods are usually described in terms of their statistical frequency. A "100-year flood" or "100-year floodplain" describes an event or an area subject to a percent probability of a certain size flood occurring in any given year. Because floodplains can be mapped, the boundary of the 100-year flood is commonly used in floodplain mitigation programs to identify areas where the risk of flooding is significant. Executive Order 11988, *Floodplain Management*, requires that each federal agency "shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Wetlands are considered special category sensitive habitats and are subject to regulatory authority under Section 404 of the Clean Water Act and Executive Order 11990 *Protection of Wetlands.* They include jurisdictional and non-jurisdictional wetlands. Jurisdictional wetlands are those defined by the USACE and USEPA as those areas that meet all the criteria defined in the USACE's 1987 *Wetlands Delineation Manual* and under the jurisdiction of the USACE (USACE 1987). The State of Virginia also regulates impacts to state waters, including wetlands, under the Virginia Water Protection Permit Program (VWPPP). The VWPPP is administered by the DEQ's Division of Water Quality, Office of Wetlands and Water Protection/Compliance. This permit program also serves as Virginia's Section 401 certification program for federal Section 404 permits. Activities requiring a permit include dredging, filling, or discharging any pollutant into or adjacent to surface waters, or otherwise altering the physical, chemical or biological properties of surface waters, excavating in wetlands, or conducting the following activities in a wetland: 1) New activities to cause draining that significantly alters or degrades existing wetland acreage or functions, 2) Filling or dumping, 3) Permanent flooding or impounding, or 4) New activities that cause significant alteration or degradation of existing wetland acreage or functions.

3.7.1 Affected Environment

Coastal Zone. All three of the alternative locations under the proposed action would occur within Virginia's Coastal Zone (as defined by the VCP), within areas designated as Resource Management Areas (RMA) according to the Chesapeake Bay Preservation Act (CBPA). None of the alternative sites meet the criteria of the more protective designation of CBPA Resource Protection Area (RPA).

Floodplains. The majority of Langley AFB lies within 100-year floodplain. Flooding can sometimes be severe on the base, particularly during major thunderstorms and hurricanes. Areas below 9 ft mean sea level, along the base's perimeter and closest to the water bodies surrounding the installation, are more prone to flooding (Air Force 1998). A map showing the location of the floodplain for the alternative site locations is available in Figure 3-2.

Wetlands. Wetlands at Langley AFB encompass approximately 652 acres, 462 acres of which are non-freshwater estuarine wetlands. Salt and freshwater marshes of the northwest and southwest branches of the Back River, New Market Creek, Brick Kiln Creek, Tabbs Creek, and Tides Mill Creek surround the base on three sides. Tidal flow from the Chesapeake Bay is substantial along these margins; however, most inland freshwater wetlands have been filled, drained to ditches, or converted into golf course features (Air Force 1998). Most wetlands at Langley AFB are located at the northern boundary of the base along the Northwest Branch of the Back River (Figure 3-3).

Freshwater wetlands on base include palustrine forested, emergent, and scrub-shrub wetlands. Forest and scrub-shrub wetlands occur in low-lying upland areas with nutrient-poor sandy soils and are dominated by bottomland hardwood trees and shrubs. Emergent wetlands primarily occur as small remnant patches, along drainage ditches, and as tidal marsh (Air Force 1998). A summary of the wetland types occurring at Langley AFB is provided in Table 3-7.

Table 3-7 Wetland Types Occurring at Langley AFB

Wetland Type	***Acreage***
Estuarine Unconsolidated Bottom	72.76
Estuarine Emergent	343.78
Estuarine Scrub/Shrub	39.00
Estuarine Unconsolidated Shoreline	6.33
Palustrine Emergent	76.22
Palustrine Forested	97.33
Palustrine Scrub/Shrub	16.48
Total Wetland Acreage	**651.90**
Total Upland Acreage	**2608.76**
Total Acreage Delineated	**3260.66***

Source: Air Force 1998

* Figure disagrees slightly with Langley AFB Real Estate total of 3,167 due to inclusion of the seaward extent of wetlands in the determination of acreages by the USFWS.

The wetlands and associated drainage ditches at the proposed action sites are classified as palustrine, primarily emergent. These wetlands are typically dominated by fall panic grass, dallies grass, rough barnyard grass, sedges, rushes, and other plants that can tolerate mowing (Air Force 2001). Although there are additional wetland areas adjacent to the proposed development sites, Alternative A has approximately 0.54 acres (581.3 sf) of wetlands and Alternative C has approximately 1.23 acres (1,324.0 sf). Although there is a small wetland and drainage ditch adjacent to Alternative B, site development is not expected to encompass this area. Figure 3-4 illustrates the location of these wetlands.

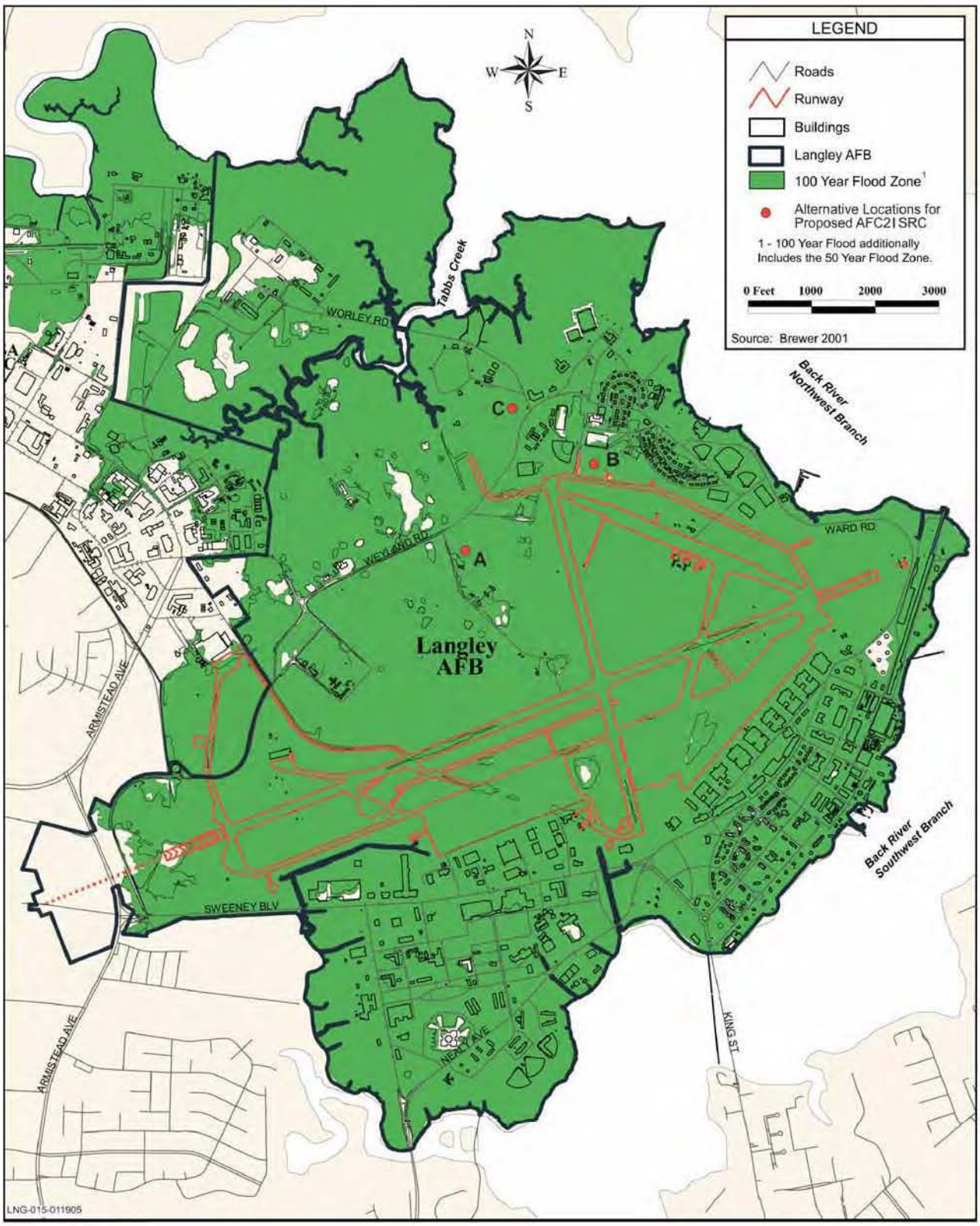

Figure 3-2 Langley AFB Floodplain

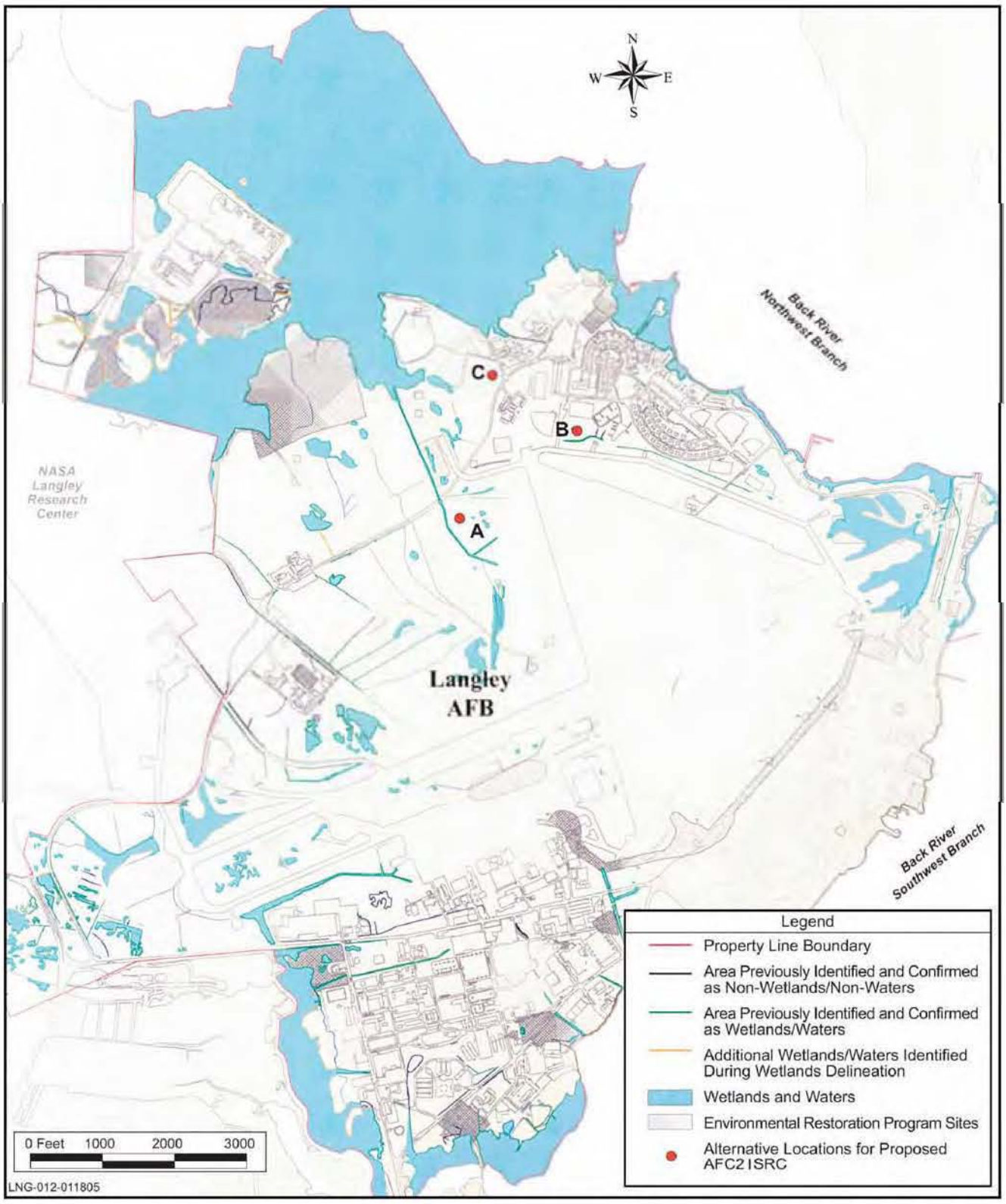

Figure 3-3 Langley AFB Wetlands

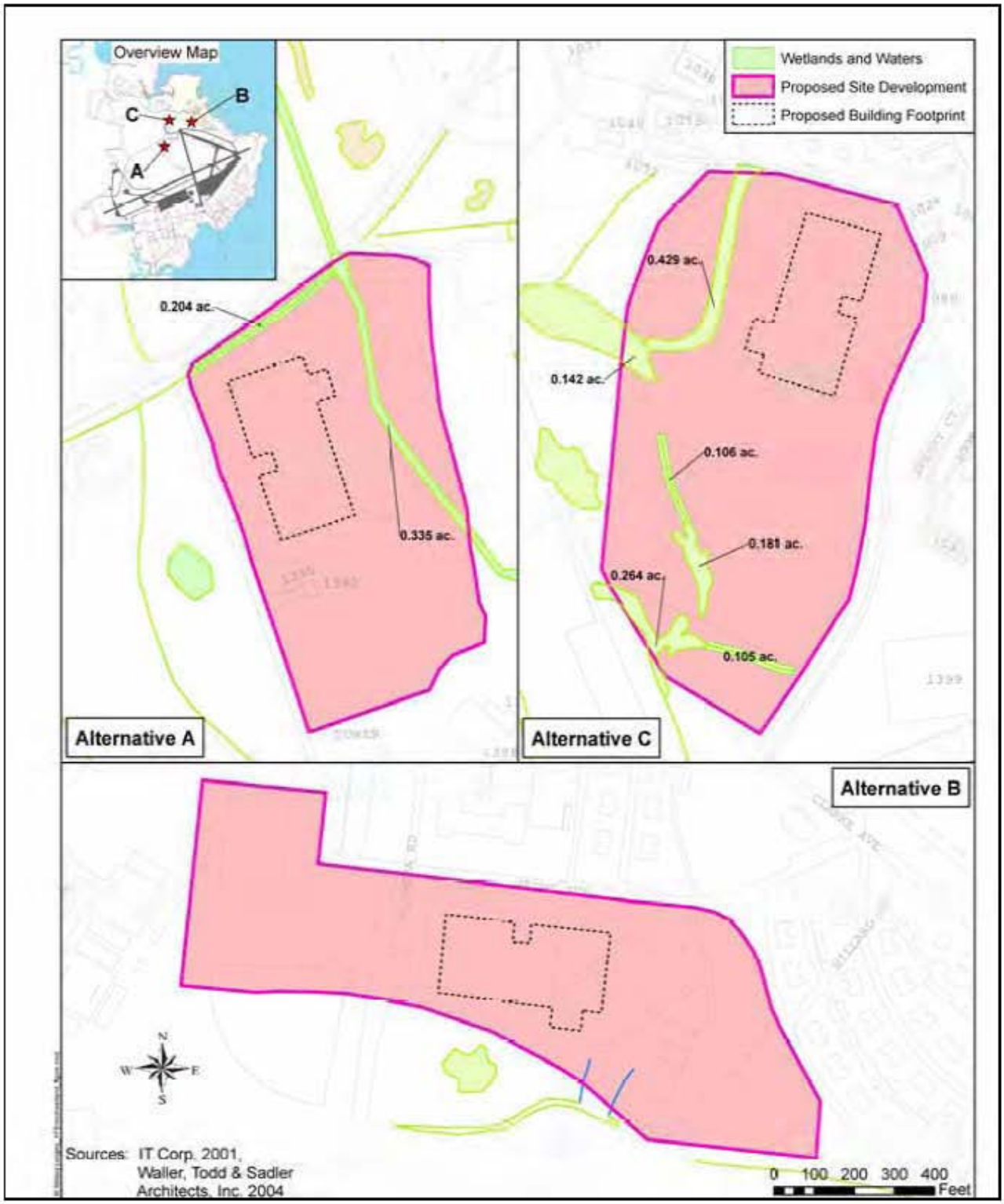

Figure 3-4 Wetlands Potentially Affected by the Proposed Action

3.7.2 Environmental Consequences

The enforceable policies outlined in the VCRMP include: fisheries management, sub-aqueous lands management, wetlands management, dunes management, non-point source pollution control, point source pollution control, shoreline sanitation, air pollution control, and coastal lands management (i.e., Chesapeake Bay Preservation Act). Consistency with the VCRMP is achieved by obtaining all applicable permits and approvals required under the Enforceable Programs of the VCRMP prior to commencing the project. Work associated with the proposed action would, as a matter of comity, be conducted as much as possible so as to be consistent with the Chesapeake Bay Preservation Act.

Proposed Action

Coastal Zone. Virginia's requirements applicable to actions in the coastal zone, floodplains, or wetlands are all managed under the VCP. The Air Force has determined that the proposed action at any of the three alternative sites is consistent with all applicable enforceable policies of the VCP as summarized below.

Fisheries Management – The proposed action would have no adverse effect on the conservation and enhancement of finfish and shellfish resources or the promotion of commercial and recreational fisheries if implemented at any of the three alternative locations.

Subaqueous Lands Management – The proposed action and alternatives would not affect subaqeous lands.

Wetlands Management – No adverse consequences are anticipated to wetlands at any of the three proposed sites provided sedimentation and erosion control measures are implemented, a permit is issued by the Army Corps of Engineers as necessary, and mitigation takes place as required to prevent net loss of wetland acreage and function. Additionally, work would be conducted in accordance with the requirements of any permit issued by the VWPPP. If either Alternatives A or C is chosen, a wetland mitigation plan would be required within 90 days of FONSI/FONPA signature (32 Code of Federal Regulations Part 989.22(d)). Specific wetland impacts from the proposed action at each alternative site are addressed later in this section.

Dunes Management – There are no sand-covered dunes or sand dunes in any of the proposed alternative locations.

Non-Point Source Pollution Control – Upland site development associated with initial forest clearing, building and parking lot construction could potentially involve minor sedimentation from land

disturbance activities. However, excavation and ground-disturbing activities would be conducted in a manner to control erosion and sedimentation. Proper use of siltation screens and other best management practices would also minimize erosion and sedimentation. Because upland construction activities would disturb approximately 12 to 18 acres of land, depending on the alternative selected, the Air Force would follow all the applicable standards specified in Virginia's Erosion and Sediment Control Law, Regulations, and Certification Regulations (4 VAC 50-30-40).

Point Source Pollution Control – Langley AFB currently operates under and is in compliance with a VPDES permit administered by Virginia DEQ. The proposed action at any of the proposed development sites would disturb more than 5 acres of land, requiring a VPDES General Stormwater Permit. However, operations under the proposed action would not involve a point source emission or affect the status of the base's permit.

Shoreline Sanitation – There are no septic tanks in or near the proposed alternative sites. The proposed building constructed on any of the alternative sites will be connected to the sanitary sewer system.

Air Pollution Control – The proposed action would not involve emissions of regulated air pollutants or affect the status of the base's Synthetic Operating Permit.

Coastal Lands Management – The three sites proposed for development are in a coastal area designated as a Resource Management Area under the CBPA. Site development will meet the required general performance criteria under the CBPA (9 VAC 10-20-120) by

- Only disturbing land necessary for the proposed action,
- Preserving indigenous vegetation to the maximum extent practicable,
- Implementing best management practices regarding maintenance,
- Using a plan of development review process consistent with 15.2-2286 A 8 of the Code of Virginia and subdivision 1e of 9 VAC 10-20-231,
- Minimizing impervious cover,
- Complying with the requirements of the local erosion and sediment control ordinance,
- Managing stormwater consistent with the water quality protection provisions (4 VAC 3-20-71 *et seq*.) of the Virginia Stormwater Management Regulations (4 VAC 3-20),
- Ensuring that silviculture activities adhere to water quality protection procedures prescribed by the Virginia Department of Forestry, and
- Providing evidence of wetland permits required to authorize grading or other on-site activities.

Alternative A – Poplar Road

Floodplains. Alternative A is located within the 100-year floodplain and all construction activities would occur within the floodplain. Design of the building (e.g., elevated 4 ft) and parking/access area associated with the proposed action would be in accordance with Virginia's requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare.

Wetlands. Approximately 0.54 acre of wetlands would be filled to accommodate the proposed action at Alternative A (refer to Figure 2-2). This impacted area of wetlands comprises approximately 0.7 percent of the 76.2 acres of palustrine emergent wetlands on base and 0.08 percent of the 651.9 acres of all wetlands identified on base. Construction of the building and parking/access area would require the realignment of approximately 500 ft of the northwest drainage ditch and approximately 950 ft of the northeastern drainage ditch. A permit from the USACE is required and wetlands impacted would likely require mitigation to prevent net loss of existing wetland acreage and function. A potential mitigation site previously identified by the USACE is at the abandoned bridge east of LaSalle Avenue Gate. Approximately 0.5 acres could be restored by removing the abandoned bridge structure from the waterway. Other tidal marsh mitigation sites have been identified as well in the area and could be used to prevent net loss of wetland acreage and function (USACE 2004). Standard construction practices would be applied to control sedimentation and erosion during construction, thereby avoiding secondary impacts to wetlands. With the implementation of these practices during construction and the mitigation of the affected wetlands, no adverse consequences are anticipated. Selection of this alternative would require a wetland mitigation plan within 90 days of FONSI/FONPA signature (32 Code of Federal Regulations Part 989.22(d)).

Alternative B – Ball Field

Floodplains. Alternative B is located within the 100-year floodplain and all construction activities would occur within the floodplain. Design of the building (e.g., elevated 5 ft) and parking/access area associated with the proposed action would be in accordance with Virginia's requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare.

Wetlands. Wetlands associated with Alternative B are not expected to be directly impacted by the proposed action. However, indirect effects are possible to the approximate 150-ft diameter circular wetland area and the approximate 1,300 ft drainage ditch located immediately to the south of the site development area (refer to Figure 2-3). Best management practices would be applied to control sedimentation and erosion during construction, thereby minimizing secondary impacts to wetlands. With the implementation of these practices during site development, no adverse consequences to wetlands are anticipated.

Alternative C – Horse Pasture

Floodplains. Alternative C is located within the 100-year floodplain and all construction activities would occur within the floodplain. Design of the building (e.g., elevated 5 ft) and parking/access area associated with the proposed action would be in accordance with Virginia's requirements. There would be no real change in the risk of flood loss and its associated impacts on human health, safety, and welfare.

Wetlands. Approximately 1.23 acres of wetlands would be filled to accommodate the proposed action at Alternative C. This impacted area of wetlands comprise approximately 1.6 percent of the 76.2 acres of palustrine emergent wetlands on base and 0.19 percent of the 651.9 acres of all wetlands identified on base. Construction of the building and parking/access area would require the removal of approximately 0.57 acres (613.5 sf) of wetlands at the northeast portion of the site and approximately 0.66 acres (710.4 sf) of wetlands in the lower southeastern portion of the proposed development site (refer to Figure 2-4). A permit from the USACE would be required and wetlands impacted would likely require mitigation to prevent net loss of existing wetland acreage and function. As mentioned under Alternative A, a potential mitigation site previously identified by the USACE is at the abandoned bridge east of LaSalle Avenue gate. Approximately 0.5 acres (538.2 sf) could be restored by removing the abandoned bridge structure from the waterway. Selection of this alternative would require a wetland mitigation plan within 90 days of FONSI/FONPA signature (32 Code of Federal Regulations Part 989.22(d)).

Other tidal marsh mitigation sites have been identified as well in the area and could be used to prevent net loss of wetland acreage and function (USACE 2004). Standard construction practices would be applied to control sedimentation and erosion during construction, thereby avoiding secondary impacts to wetlands. With the implementation of these practices during construction and the mitigation of the affected wetlands, no adverse consequences are anticipated.

No-Action Alternative

Under the no-action alternative, there would be no change to the existing effects on the coastal zone, floodplains, or wetlands since conditions, as described under the affected environment for this resource, would continue.

3.8 SOCIOECONOMICS

Socioeconomics for this EA focus on the general features of the local economy that could be affected by the proposed action or no-action alternative. The affected environment for this analysis includes the cities of Hampton, York County/Poquoson, Newport News, James City County/Williamsburg, and Norfolk, which are the areas surrounding Langley AFB and in which most socioeconomic effects would be experienced. Socioeconomics comprise the basic attributes of population and economic activity within an

affected environment and typically encompasses population, employment and income, and industrial/commercial growth.

3.8.1 Affected Environment

Socioeconomic data provided in this section consist primarily of data for Langley AFB and the cities and towns adjacent to the base. The analysis focuses on the areas in which most socioeconomic effects would be experienced due to construction activities. Under the AFC2ISRC consolidation, no change in personnel numbers would occur. All personnel currently reside in the Hampton Roads area.

Population. The population of the region increased by less than 1 percent from 1990 to 1999, reaching 670,650 persons in 1999. By comparison, the population of the state of Virginia increased by almost 11 percent during the same period, reaching 6,872,912 in 1999, at an average annual rate of 1 percent (USCB 2000).

Approximately 85 percent of the 2000 population of the region resides in cities and towns that range in size from Poquoson (with a population of 11,566) to Norfolk (with a population of 234,403). The largest include Norfolk, Newport News (180,150 persons), and Hampton (146,437 persons). The combined regional population is projected to increase from about 679,700 in 2000 to 712,013 by the year 2010 at an average annual growth rate of 0.5 percent (USCB 2000).

Employment and Earnings. Employment and earnings information is presented for the following jurisdictions whose economies are closely associated with activities at Langley AFB: York County/Poquoson, James City County/Williamsburg, Newport News, Hampton, and Norfolk. Comparisons are also presented with conditions for the Commonwealth of Virginia.

In the region, total full- and part-time employment decreased from 501,950 jobs in 1990 to 498,938 in 1997, at an average rate of less than 0.1 percent annually. The largest contributions to employment in 1997 were made by services (27.0 percent), military (16.6 percent), and retail trade (14.4 percent). For the years 1980, 1990, and 1997, the contribution of the military decreased from 21.7 percent to 21.0 percent and 16.6 percent, respectively. The sectors of the economy exhibiting the greatest addition of jobs over the period 1990 to 1997 were services and state and local government (USDCESA 2000). Earnings for AFC2ISRC personnel have been accounted for in the regional totals.

In the Commonwealth of Virginia, military employment declined from 6.5 percent of total employment in 1980 to 5.7 percent in 1990 and 4.2 percent in 1997. The sectors of the economy exhibiting the greatest addition of jobs in the state over the period 1990 to 1997 were services and retail trade (USCB 2000). In addition to economic effects associated with payroll expenditures by Langley AFB personnel, the installation also purchases significant quantities of goods and services from local and regional firms. In

2003, annual expenditures by the base totaled over $963 million. Further, the Air Force estimates that the economic stimulus of Langley AFB created approximately 6,206 secondary jobs in the civilian economy (Air Force 2003e).

3.8.2 Environmental Consequences

Proposed Action

Socioeconomic analysis focuses on the potential effects of demolition and construction activities associated with the proposed action at the three alternative locations. Since personnel numbers would not increase or decrease, no changes due to AFC2ISRC operations would occur to the socioeconomic environment in the region.

Alternative A – Poplar Road

Demolition and construction activities under the proposed action would comprise about 30 months; cost estimates are $49.2 million (Air Force 2004b). Approximately 25 to 30 workers would be employed at any one time during construction. Workers would likely commute from the surrounding area to Langley AFB on a short-term temporary basis. It is probable that local construction companies would be contracted to build the AFC2ISRC facility, with the majority of the construction materials purchased outside the local region and transported to the site. Under Alternative A, demolition and construction activities of the AFC2ISRC would result in short-term beneficial impacts to the local economy. When compared with local regional development projects, the economic impacts would be easily absorbed within the Hampton Roads region and not create adverse impacts to the local socioeconomic environment.

Alternative B – Ball Field

Construction activities at this alternative site would result in same short-term beneficial impacts to the local economy described under Alternative A. The construction period would take approximately 30 months and employ between 25 to 30 workers at any one time during the construction period. Workers would likely commute from the surrounding area to Langley AFB on a short-term temporary basis and local construction companies would be contracted to build the AFC2ISRC facility with the majority of the construction materials purchased outside the local region and transported to the site. As with Alternative A, when compared with local regional development projects, the economic impacts under Alternative B would be easily absorbed within the Hampton Roads region and not create adverse impacts to the local socioeconomic environment.

Alternative C – Horse Pasture

As under Alternatives A and B, socioeconomic impacts under Alternative C would result in short-term beneficial impacts to the local economy. Construction and labor costs would essentially be the same under this alternative as those described under both Alternatives A and B. Construction activities would result in short-term beneficial impacts to the local economy and would be easily absorbed within the Hampton Roads region and not create adverse impacts to the local socioeconomic environment.

No-Action Alternative

Under the no-action alternative, no additional input due to demolition and construction costs would occur and no changes to the local or regional economy would be expected.

3.9 LAND USE, VISUAL, AND RECREATIONAL RESOURCES

Land use generally refers to human modification of land, often for residential or economic purposes. It also refers to the use of land for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features. Human land uses include residential, commercial, industrial, agricultural, and recreation. Unique natural features are often designated as national or state parks, forests, wilderness areas, or wildlife refuges.

Attributes of land use include general land use and ownership, land management plans, and special use areas. Land ownership is a categorization of land according to the type of owner. Major land ownership categories include federal, state, American Indian, and private. Federal lands are further defined by the managing agency, which may include the USFWS, U.S. Forest Service, Bureau of Land Management, or the DoD. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of activities that are allowed or that protect specially designated or environmentally sensitive uses. Special Use Land Management Areas are identified by federal and state agencies as being worthy of more rigorous management.

Visual resources are defined as the natural and manufactured features that comprise the aesthetic qualities of an area. These features form the overall impression that an observer receives of an area or its landscape character. Landforms, water surfaces, vegetation, and manufactured features are considered characteristics of any area if they are inherent to the structure and function of the landscape. The significance of a change in visual character is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for visual resources in the area. Recreational resources include evaluation of the potential effects to activities such as swimming, boating, hiking, and fishing and the lands that support these activities. For this environmental assessment, these social considerations are addressed as visual and recreational sensitivity, and are

defined as the degree of public interest in a visual or recreational resource and concern over adverse changes in the quality of that resource.

3.9.1 Affected Environment

Langley AFB includes developed and undeveloped lands. Main categories of developed land uses include airfield and flightline, industrial areas, administrative facilities, housing, recreation sites, and medical facilities. Undeveloped lands are commonly called open space in planning documents and may include natural or cultural resource preservation sites, safety buffers, or other similar land uses. The affected environment is the proposed alternative areas for construction of the AFC2ISRC (see Figure 1-2). The Langley AFB Management Action Plan (Air Force 2003d) indicates the following present land use designations for the proposed alternative site locations: Alternative A (Industrial), Alternative B (Outdoor Recreation), and Alternative C (Open Space).

3.9.2 Environmental Consequences

Proposed Action

Implementation of the proposed action at any of the alternative sites would require a land use designation change to Administrative.

Alternative A – Poplar Road

Construction of the AFC2ISRC at this site would not be consistent with current industrial land use. Proper environmental permitting (i.e., HQ ACC zoning waiver) would be secured before construction would take place. Changing the land use designation from industrial to administrative would not be expected to have a significant impact on this resource. The view from Weyland Road and the Langley AFB golf course would change when the proposed three-story building is erected. Although the visual character of the area would change due to removal of 4.5 percent of the wooded acreage on the base, there would be little adverse impacts on aesthetics due to implementation of Langley AFB architectural compatibility standards, retention of some trees, and proposed landscaping around the building and parking areas. Impacts to visual resources from construction equipment and vehicles would be short-term and would not be expected to have an adverse impact. No adverse impacts to recreational resources would be expected as none currently exist. In summary, there would be little effect to land management and use, visual, and/or recreational resources if Alternative A were selected as the proposed location for the AFC2ISRC facility.

Alternative B – Ball Field

Land use designation is currently outdoor recreation at this location. Construction of the AFC2ISRC at this site would not be consistent with this designation. Proper environmental permitting (i.e., HQ ACC zoning waiver) would be obtained prior to construction taking place. Placement of the three-story facility adjacent to the historic district and residential housing may have an adverse impact on visual resources. Coordination with the State Historic Preservation Office may be required (due to its adjacency to the district) prior to AFC2ISRC construction activity. Impacts to visual resources from construction equipment and vehicles would be short-term in duration and present little adverse impacts. Removal of two of the existing seven ball fields would be expected to have an impact on recreational resources. In summary, there may be a minor, but adverse effect to land management and use, visual, and/or recreational resources if Alternative B were selected as the proposed location for the AFC2ISRC facility.

Alternative C – Horse Pasture

The horse pasture and stables have been under lease by the Langley Saddle Club (LSC) since 1953. The lease which provided for approximately 30 acres of land to the LSC will expire on April 30, 2006. Construction of the AFC2ISRC at this site would not be consistent with current open space land use designation; however, the Langley AFB Management Action Plan indicates land use in vicinity of the horse pasture would be changed to administrative in the future; therefore, a HQ ACC zoning waiver would not be required (Air Force 2003d). Changing the land use designation from recreational to administrative would be expected to have an impact on this resource due to the unique nature of activities associated with the site. However, since the lease expires in 2006, Langley AFB does have the option not to renew it and the LSC would need to find an alternative location for stabling their horses. Implementation of the proposed action could have an adverse, though not a significant impact to recreational resources. In summary, if Alternative C were implemented, there may be an adverse effect to recreational resources by eliminating the stables and a negligible impact to land management and use and visual resources due to the site's redesignation to administration from open space.

No-Action Alternative

Under this alternative, the Air Force would not construct the AFC2ISRC on Langley AFB at this time. No changes to land use would be expected. No adverse impacts to visual or recreational resources would be expected because there would be no change to existing aesthetic values or recreational opportunities.

CHAPTER 4

CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CHAPTER 4
CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.1 CUMULATIVE EFFECTS

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR Part 1508.7). Assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action and alternatives, if they overlap in space and time.

Cumulative effects are most likely to arise when a proposed action is related to other actions that occur in the same location or at a similar time. Actions geographically overlapping or close to the proposed action and alternatives would likely have more potential for a relationship than those farther away. Similarly, actions coinciding in time with the proposed action and alternatives would have a higher potential for cumulative effects.

To identify cumulative effects, three fundamental questions need to be addressed:

1. Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

4.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time in which the effects could occur. Since the potential impacts of the proposed action include Langley AFB and its vicinity, the cumulative effects analysis includes only those actions occurring within this region of Langley AFB. The time frame for cumulative effects would begin in 2008 when the AFC2ISRC project would be expected to begin. Public documents prepared by federal, state, and local government agencies were the primary sources of information for identifying reasonable foreseeable actions.

Past and Present Actions

Langley AFB is an active military installation that undergoes continuous change in mission and in training requirements. This process of change is consistent with the United States defense policy that the Air Force must be ready to respond to threats to American interests throughout the world. In 1998, the Air Force implemented a force structure change that added 12 F-15C aircraft and 134 personnel to Langley AFB, increasing the total number of F-15C aircraft to 66. Since then, the base completed establishment of a Combined Air Operations Center-Experimental and beddown of the Aerospace Expeditionary Force Center. In 2002, the Air Force selected Langley AFB for the initial wing of F-22 aircraft. The first operational F-22 aircraft arrived at Langley AFB in January 2005. Facilities to support the F-22 wing are expected to be complete in fiscal year 2005. Approximately 16 acres along the flightline were disturbed for the F-22 beddown construction.

Numerous projects are in progress at the base, including facility improvements and infrastructure upgrades. Portions of the water and wastewater treatment system, a library, a fitness center, an operations support center, and anti-terrorism/force protection of the King Street Gate were completed in the past year.

Future Proposed Actions

In 2003, Langley AFB approved the Langley AFB General Plan, which identified areas on the base where existing missions could be expanded and where new missions could be located (Air Force 2003a). In the northern portion of the base, conceptual planning and design for consolidation of multiple functions of the 1st Communications Squadron into a pedestrian-oriented campus environment and placement of a new 800-person facility is being considered (Air Force 2003a; personal communication, Baie 2005).

During the timeframe Fiscal Year 05 to Fiscal Year 09, Langley AFB has proposed to implement numerous construction projects which include: family housing, a new youth center, expansion of the hospital, construction of a new Army and Air Force Exchange Service mini-mall and service station, combined arms training range, and anti-terrorism/force protection entry gates at the LaSalle and West Gates. Various military construction and improvement projects are proposed and would require environmental analysis if undertaken. Examples of these projects include administration, operations, and support facilities. In addition, Langley AFB has developed a planning approach, Wing Infrastructure Development Outlook, which identifies future facility upgrades needed to support the mission and will evaluate these within a single environmental assessment.

The AFC2ISRC construction proposal, when combined with future foreseeable proposals would disturb approximately 45 acres of land during a 5-year time frame. This represents less than 2 percent of total acreage (2,883 acres) of Langley AFB over the next 5 years. Wetland loss or disturbance could be either mitigated on site or elsewhere on Langley AFB in potential mitigation areas identified by the USACE. Implementation of the proposed action would result in temporary impacts to the resources analyzed;

however, when combined with other future proposed actions in the northern portion of the base, may have an adverse cumulative effect on other resources.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

For the proposed action, most resource commitments are neither irreversible nor irretrievable. Most environmental consequences are short-term and temporary, such as air emissions from demolition and construction operations. The AFC2ISRC construction would require consumption of limited amounts of materials typically associated with construction (wood, metal, asphalt, and fuel). However, the amount of these materials used is not expected to significantly decrease the availability of these resources.

CHAPTER 5

REFERENCES CITED

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CHAPTER 6

PERSONS AND AGENCIES CONTACTED

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PERSONS AND AGENCIES CONTACTED

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John Evans. Regulatory Branch. USACE Norfolk District. December 2004.

Michael Foreman. Department of Forestry. Charlottesville, VA. December 2004.

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Tony Watkinson. Virginia Marine Resource Commission. Newport News, VA. December 2004.

Alan Weber. Department of Health. Richmond, VA. December 2004.

Charles Welch. AFC2ISRC/CCT. January 2005.

Gerald Wilkes. Department of Mines, Minerals & Energy. December 2004.

Steve White. Construction East Branch. ACC/CECE. January 2005.

Harold Winer. Tidewater Regional Office. Virginia Beach, VA. December 2004.

Andy Zadnick. Virginia Department of Game and Inland Fisheries. Richmond VA. December 2004.

CHAPTER 7

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B.S., Chemical Engineering, Tulane University, 1987
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B.A., Economics, University of Virginia, 1998
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M.A., International Relations, George Washington University, DC 1983
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B.S., Forestry and Wildlife Science/Virginia Polytechnic Institute & State University, 1992
M.S., Environmental Science, Christopher Newport University, 2001
Years of Experience: 12

APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Ms. Ellie Irons
Virginia Department of Environmental Quality
629 East Main Street, 6th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

1. This letter is being sent in accordance with Air Force requirements for Interagency and Intergovernmental Coordination for Environmental Planning (IICEP). Headquarters Air Combat Command (HQ ACC) is preparing an Environmental Assessment (EA) for the proposed beddown of the AFC2ISRC within the boundaries of Langley AFB. This action consolidates an existing organization that is currently located at multiple facilities on- and off-base in a new 183,000-square foot facility. The EA will analyze three locations for the proposed facility (Atch 1).

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3. Please contact Mr. Troy M. Andersen, EA Project Manager, HQ ACC at (757) 764-9198 with any questions or concerns.

JoAnn Whitson

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Chief, Environmental Analysis Branch

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Map of Alternative Siting Location

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Andy Zadnick
Virginia Department of Game and Inland Fisheries
4010 West Broad Street
Richmond VA 23230

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

26 DEC 2004

MEMORANDUM FOR: Mr. Michael Foreman
Department of Forestry
900 Natural Resources Drive, Suite 800
Charlottesville VA 22903

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Kotur Narasimhan
Air Data Analysis Program
629 East Main Street, 8th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Tom Modena
Waste Division
629 East Main Street, 4th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Ms. Ellen Gilinsky
Virginia Water Protection Program
629 East Main Street, 9th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB, VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Harold Winer
Virginia Department of Environmental Quality,
Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach VA 23462

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Keith Tignor
Office of Plan & Pest Services
1100 Bank Street
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Ms. Catherine Harold
Chesapeake Bay Local Assistance Department
101 N. 14th Street, 17th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. John Davy
Department of Conservation & Recreation
203 Governor Street
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Alan Weber
Department of Health, Division of Drinking Water
109 Governor Street, 6th Floor
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Gerald Wilkes
Department of Mines, Minerals & Energy
Division of Mineral Resources
P.O. Box 3667
Charlottesville VA 22903

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Thomas Barnard, Jr.
Virginia Institute of Marine Science
P.O. Box 1346
Gloucester Point VA 23062

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. Tony Watkinson
Virginia Marine Resources Commission
2600 Washington Avenue
Newport News VA 23607

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Mr. David Grimes
Virginia Department of Transportation
Environmental Division
1401 East Broad Street
Richmond VA 23219

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

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Jo Ann Whitson

JO ANN M. WHITSON
Chief, Environmental Analysis Branch

1 Attachment:
Map of Alternative Siting Location

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: U.S. Fish and Wildlife Service (Kim Marbane)
6669 Short Lane
Gloucester VA 23061

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665-2769

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

1. This letter is being sent in accordance with Air Force requirements for Interagency and Intergovernmental Coordination for Environmental Planning (IICEP). Headquarters Air Combat Command is preparing an Environmental Assessment (EA) for the proposed beddown of the AFC2ISRC within the boundaries of Langley AFB. The purpose of the proposal is to construct a new 183,000-square foot facility to consolidate an existing organization that is currently located at multiple facilities on- and off-base. The EA will analyze three locations for the proposed facility (Atch 1).

2. The EA will analyze the potential effects of this proposed action on environmental resources. Pursuant to the Endangered Species Act and the National Environmental Policy Act, we request information regarding federally listed or proposed species that may be present in the potentially affected area. We would appreciate receiving the information in digital format, if available. We will contact you at a later date to determine the need for a Section 7 consultation. We anticipate a draft EA will be made available for public and agency comment in March 05.

3. Our contractor for this project is The Environmental Company (TEC) and we would appreciate your cooperation during their data collection efforts.

4. Please contact the EA Project Manager, Mr. Troy Andersen at HQ ACC/CEVP, (757) 764-9198 with any questions or concerns.

Jo Ann Whitson

JO ANN M. WHITSON
Chief, Environmental Analysis Branch

1 Attachment:
Map of Alternative Siting Locations

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

28 DEC 2004

MEMORANDUM FOR: Virginia Department of Historic Resources (Ethel Eaton)
2801 Kensington Avenue
Richmond VA 23221

FROM: HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB VA 23665-2769

SUBJECT: Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base (AFB) Virginia

1. This letter is being sent in accordance with Air Force requirements for Interagency and Intergovernmental Coordination for Environmental Planning (IICEP). Headquarters Air Combat Command is preparing an Environmental Assessment (EA) for the proposed beddown of the AFC2ISRC within the boundaries of Langley AFB. The purpose of the proposal is to construct a new 183,000-square foot facility to consolidate an existing organization that is currently located at multiple facilities on- and off-base. The EA will analyze three locations for the proposed facility (Atch 1).

2. We will use information collected from the EA to consider any impacts on historic properties identified. This information will be coordinated with your office according to the steps outlined in 36 CFR 800.7. We anticipate a draft EA will be made available for public agency comment in Mar 05.

3. Our contractor for this project is The Environmental Company (TEC), and we would appreciate your cooperation during their data collection efforts.

4. Please contact the EA Project Manager, Mr. Troy Andersen at HQ ACC/CEVP, (757) 764-9198 with any questions or concerns.

Jo Ann Whitson

JO ANN M. WHITSON
Chief, Environmental Analysis Branch

1 Attachment:
Map of Alternative Siting Locations

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Fax (804) 698-4500 TDD (804) 698-4021
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Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

January 10, 2005

Ms. Jo Ann M. Whitson
Chief, Environmental Analysis Branch
Headquarters, Air Combat Command
HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley Air Force Base, Virginia 23665

RE: Proposed Bed-down of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Langley Air Force Base, Virginia

Dear Ms. Whitson:

Thank you for your memo/letter dated December 28, subject as above, which we received on January 4.

The Department of Environmental Quality's Office of Environmental Impact Review coordinates Virginia's review of National Environmental Policy Act (NEPA) documents and responds to appropriate federal officials on behalf of the Commonwealth. In addition, this Office is the lead agency for Virginia's review of federal consistency determinations and certifications submitted pursuant to the Coastal Zone Management Act. Accordingly, we will be interested in reviewing the Environmental Assessment (EA) when it is published.

Environmental Review and Scoping

We are sharing your letter/memo with the following Virginia agencies, all of which we will ask for review comments when the document becomes available (note: starred (*) agencies administer one or more of the Enforceable Programs of the Virginia Coastal Resources Management Program; see "Federal Consistency...," below):

Department of Environmental Quality:
Office of Environmental Impact Review
Tidewater Regional Office*

Water Division*
Air Division*
Waste Division
Department of Game and Inland Fisheries*
Department of Conservation and Recreation:
Division of Soil and Water Conservation*
Division of Chesapeake Bay Local Assistance*
Department of Health*
Marine Resources Commission*
Department of Historic Resources
Department of Forestry
Department of Transportation
Hampton Roads Planning District Commission
City of Hampton
City of Poquoson.

We expect that the EA will include not only an analysis of the issues mentioned in the Notice (pages 2-3) in keeping with National Environmental Policy Act requirements, but also that it will include effective mapping (i.e., U.S. Geological Survey topographic maps or their equivalents) of the project area.

In order to ensure an effective coordinated review of the Environmental Impact Statement or Environmental Assessment, we will require 18 copies of the document when it is published. While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the NEPA documents for the proposed project.

Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities affecting Virginia's coastal resources or coastal uses must be consistent with the Virginia Coastal Resources Management Program (VCP) (see section 307(c)(1) of the Act and the Federal Consistency Regulations, 15 CFR Part 930, sub-part C). The Air Force must provide a consistency determination which involves an analysis of the activities in light of the Enforceable Programs of the VCP (first enclosure), and a commitment to comply with the Enforceable Programs. In addition, we invite your attention to the Advisory Policies of the VCP (second enclosure). The federal consistency determination may be provided as part of the NEPA documentation or independently, depending on your agency's preference; however, we believe it would benefit both the Air Force and the Commonwealth if the consistency determination is provided as part of the NEPA document. Section 930.39 of the Federal Consistency

Regulations and Virginia's Federal Consistency Information Package (see below) give content requirements for the consistency determination.

The Federal Consistency Information Package is available on DEQ's web site, http://www.deq.virginia.gov. Select "Programs" on the left, then scroll to "Environmental Impact Review/Federal consistency." Select "federal consistency reviews" on the left. This gives you access to the document. If you have questions about the environmental review process or the federal consistency review process, please feel free to call me (telephone (804) 698-4325) or John Fisher of this Office (telephone (804) 698-4339).

I hope this information is helpful to you.

Sincerely,

Ellie L. Irons
Program Manager
Office of Environmental Impact Review

Enclosures

cc: Harold J. Winer, DEQ-TRO
Ellen Gilinsky, DEQ-DWQ
Kotur S. Narasimhan, DEQ-Air
Allen R. Brockman, DEQ-Waste
Andrew K. Zadnik, DGIF
Robert S. Munson, DCR
Alan D. Weber, VDH
J. Michael Foreman, DOF
Tony Watkinson, MRC
Ethel R. Eaton, DHR
Alice R. T. Baird, DCR-DCBLA
Alfred C. Ray, VDOT
John M. Carlock, Hampton Roads PDC
Greg Goetz, City of Hampton
Charles W. Burgess, Jr., City of Poquoson

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Department of Game and Inland Fisheries

William L. Woodfin, Jr.
Director

January 20, 2005

Troy M. Andersen
EA Project Manager
Department of the Air Force
HQ ACC/CEVP
129 Andrews Street, Suite 102
Langley AFB, Virginia 23665

RE: ESSLOG #20095; Proposed Beddown of the Air Force Command and Control & Intelligence, Surveillance, and Reconnaissance Center (AFC2ISRC), Alternatives A, B, & C, Langley AFB, Hampton, VA.

Dear Mr. Andersen:

This letter is in response to your request for information related to the presence of threatened or endangered species in the vicinity of the above referenced project.

The *state endangered* canebrake rattlesnake (*Crotalus horridus*) has been documented approximately 1.75 to 2 miles from the three alternatives for this proposed project. Therefore, the applicant should coordinate with this Department (Shirl Dressler, 804-367-6913) concerning potential impacts to this species.

Also, the following species have been documented at approximately the given distances from the three alternative sites for this proposed project:

federal species of concern:

northern diamond-backed terrapin (*Malaclemys terrapin terrapin*), 0.75 mile;

state special concern:

Forster's tern (*Sterna forsteri*), 0.5 to 1 mile;
Least tern (*Sterna antillarum*), 0.5 to 1 mile;
Caspian tern (*Sterna caspia*), 1.25 to 1.5 miles;
Northern harrier (*Circus cyaneus*), 1.75 to 2 miles;
Great egret (*Ardea alba*), 0.25 to 0.5 mile; and
Yellow-crowned night-heron (*Nyctanassa violacea*), 1.25 to 1.75 miles.

In addition, a block survey of an area encompassing the three alternative sites for this proposed project documented the *state special concern* saltmarsh sharp-tailed sparrow (*Ammodramus caudacutus*) during the breeding season. However, the classifications of *federal species of concern* and *state special concern* are not legal designations and do not

require further coordination.

Information about fish and wildlife species was generated from our agency's computerized Fish and Wildlife Information System, which describes animals that are known or may occur in a particular geographic area. Field surveys may be necessary to determine the presence or absence of some of these species on or near the proposed area. Also, additional sensitive animal species may be present, but their presence has not been documented in our information system.

Endangered plants and insects are under the jurisdiction of the Virginia Department of Agriculture and Consumer Services, Bureau of Plant Protection. Questions concerning sensitive plant and insect species occurring at the project site should be directed to Keith Tignor at (804) 786-3515.

The Virginia Department of Conservation and Recreation, Natural Heritage Program, maintains a database of natural heritage resources, including the habitat of rare, threatened, or endangered plant and animal species, unique exemplary natural communities, and significant geologic formations, that may contain information not documented in this letter. Their database may be accessed from http://www.dcr.state.va.us/dnh/nhrinfo.htm, or by contacting S. Rene Hypes at (804) 371-2708.

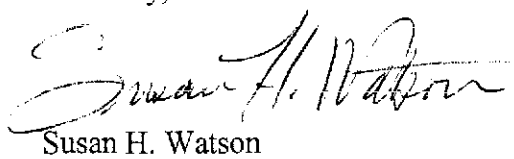
This letter summarizes the likelihood of the occurrence of endangered or threatened animal species at the project site. If you have additional questions in this regard, please contact me at (804) 367-1185. Please note that this response does not address any other environmental concerns; these issues are analyzed by our Environmental Services Section, in conjunction with interagency review of applications for state and federal permits. If you have any questions in this regard, please contact Shirl Dressler at (804) 367-6913.

Please note that the data used to develop this response are continually updated. Therefore, if significant changes are made to your project or if the project has not begun within 6 months of receiving this letter, then the applicant should request a new review of our data.

The Fish and Wildlife Information Service, the system of databases used to provide the information in this letter, can now be accessed via the Internet! The Service currently provides access to current and comprehensive information about all of Virginia's fish and wildlife resources, including those listed as threatened, endangered, or special concern; colonial birds; waterfowl; trout streams; and all wildlife. Users can choose a geographic location and generate a report of species known or likely to occur around that point. From our main web page, at www.dgif.virginia.gov, choose the hyperlinks to "Wildlife" then "Wildlife Information and Mapping Services", and then "Virginia Fish and Wildlife Information Service". For more information about the service, please contact Shirl Dressler at (804) 367-6913.

Thank you for your interest in the wildlife resources of Virginia.

Sincerely,



Susan H. Watson
Research Specialist Senior

cc: R.T. Fernald, VDGIF
R. Hypes, VDCR-DNH

COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

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June 6, 2005

Ms. Crissie D. Fitzgerald, Capt, USAF
Deputy Chief, Planning Branch
HQ ACC/CEPP
129 Andrews Street, Suite 102
Langley AFB, Virginia 23665-2769

RE: Draft Environmental Assessment and Consistency Determination for the Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC), Langley Air Force Base, City of Hampton, Virginia (DEQ 05-105F).

Dear Ms. Fitzgerald:

The Commonwealth of Virginia has completed its review of the Draft Environmental Assessment (EA) and Consistency Determination for the above referenced project. The Department of Environmental Quality is responsible for coordinating Virginia's review of federal environmental documents and responding to appropriate federal officials on behalf of the Commonwealth. Also, as you are aware, pursuant to the Coastal Zone Management Act of 1972, as amended, federal actions that can have foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia Coastal Resources Management Program (VCP). The DEQ, as the lead agency for the VCP, is responsible for coordinating Virginia's review of federal consistency determinations. The following agencies, planning district commission, and locality took part in the review of the EA:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Marine Resources Commission
Department of Agriculture and Consumer Services
Department of Mines, Minerals, and Energy
Department of Health
Department of Forestry

Department of Historic Resources
City of Hampton
Hampton Roads Planning District Commission

Project Description

The U.S. Air Force proposed to permanently consolidate the Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center (AFC2ISRC) and its divisions (Air Force Transformation Center (AFTC), Command and Control Battlelab (C2BL), and Air Force Experimentation Office (AFEO)) in a single, comprehensive facility on Langley Air Force Base (AFB) in the City of Hampton. Under the proposed action, the Air Force would construct a new facility having a ground footprint of 82,000 square feet (183,000 square feet of interior space) and an approximate 700-vehicle parking lot, with building access, in the north central portion of Langley AFB. The document analyzes three potential alternative locations (A, B, and C) on Langley AFB for the AFC2ISRC facility. The Air Force has submitted an Environmental Assessment for the project that also contains a consistency determination.

Project Site Conflict

Department of Environmental Quality (DEQ) reviewers note that the proposed Alternative Site B described in the EA prepared for the AFC2ISRC project overlaps with Alternative Site A as described in the EA prepared by the Air Force for the Consolidated Communications Facility (DEQ #05-101F) recently reviewed by DEQ. Inasmuch as the use of the Alternative A location appears to preclude use of Alternative B, it has the added disadvantage of creating additional wetland impacts by another project by default. DEQ believes that it is inappropriate to isolate these two projects from one another from a consistency review perspective because they are clearly related from a planning perspective. In reality, it appears that the Air Force has a need to provide at least two updated/consolidated facilities with virtually identical square footage requirements and at least four sites to choose from. These projects should be coordinated to ensure that the two least environmentally damaging alternatives are chosen as preferred alternatives.

Environmental Impacts and Mitigation

1. Water Quality & Wetlands. According to the EA (3.0 Summary of Environmental Consequences) implementation of the proposed action at any of the alternative sites would increase impervious surface by approximately 8.3 acres. The Air Force intends to install a stormwater dry basin to capture runoff and protect surface waters. The EA states (page 3-28) that impacts to wetlands would occur at Alternative A and C (0.05 acres and 1.23 acres, respectively) affecting about 1 percent of the wetlands at Langley AFB. The Air Force acknowledges that any wetland impacts would require mitigation. No impacts to wetlands would occur under Alternative B.

DEQ found that the EA presents three action alternatives (A, B and C) with varying degrees of surface water and wetland impacts. While it appears that alternative B has the lowest acreage of impacts, the descriptions of impacts associated with this option vary within the document. Page 2-9 of the document describes wetland disturbance that may result in mitigation while Section 2.0, Description of the Proposed Action and Alternatives states that "No impacts to wetlands would occur under Alternative B or the no-action alternative." This information should be corrected as appropriate to be consistent throughout.

Water quality and wetland impacts as a result of construction at any of the proposed alternative sites would require authorization under the Virginia Water Protection Permit (VWPP) program administered by DEQ. DEQ recommends strict adherence to erosion and stormwater management practices and further encourages the Air Force to monitor construction activities to ensure that erosion and stormwater management practices are adequately preventing sediment and pollutant migration into adjacent surface waters.

Please note that the Commonwealth does not support the filling of wetlands, particularly when alternative sites have been identified. It is the policy of the Commonwealth of Virginia to first avoid impacts to wetlands before considering other mitigation measures such as compensation. The Virginia Water Protection permit regulations state that "mitigation means sequentially avoiding and minimizing impacts to the extent practicable, and then compensating for remaining unavoidable impacts of a proposed action" (9 VAC 25-210-10). According to State Water Control Law § 62.1-44.15:5D, "...except in compliance with an individual or general Virginia Water Protection Permit issued in accordance with this subsection, it shall also be unlawful to conduct the following activities in a wetland: (i) new activities to cause draining that significantly alters or degrades existing wetland acreage or functions, (ii) filling or dumping, (iii) permanent flooding or impounding, or (iv) new activities that cause significant alteration or degradation of existing wetland acreage or functions. Permits shall address avoidance and minimization of wetland impacts to the maximum extent practicable. A permit shall be issued only if the Board finds that the effect of the impact, together with other existing or proposed impacts to wetlands, will not cause or contribute to a significant impairment of state waters or fish and wildlife resources."

Federal wetlands mitigation policy is guided by a Memorandum of Agreement between the U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency that clarify a three-step approach to avoiding, minimizing, and compensating for unavoidable impacts (see Clean Water Act Section 404 (b)(1) *Guidelines Mitigation Memorandum of Agreement*, February 1990). The Corps first makes a determination that potential impacts have been avoided to the maximum extent practicable; remaining unavoidable impacts will then be mitigated to the extent appropriate and practicable by requiring steps to minimize impacts and, finally, compensate for aquatic resource values. This sequence is considered satisfied where the proposed mitigation is in accordance with specific provisions of a Corps and EPA approved comprehensive plan that ensures compliance with the compensation requirements of the 404(b)(1) Guidelines (examples

of such comprehensive plans may include Special Area Management Plans, Advance Identification areas (Section 230.80), and State Coastal Zone Management Plans).

Therefore, to be consistent with state and federal wetlands policy and the Wetlands Management Policy of the VCP, DEQ encourages the Air Force to consider the alternative site for this project that would reduce or eliminate the destruction of wetlands.

2. Erosion and Sediment Control and Stormwater Management. As described in the EA (3.0 Summary of Environmental Consequences), measures would be taken to minimize the amount of erosion and sediment transport off site in accordance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and Regulations (4 VAC 50-30-30 *et seq.*), and stormwater management would be achieved through the preparation of a Stormwater Management Plan (SMP) in accordance with Virginia Stormwater Management Law (Virginia Code 10.1-603.5) and Regulations (4 VAC 3-20-20 *et seq.*) and applicable federal nonpoint source pollution mandates. The Air Force notes that since more than 5 acres would be disturbed by development at any of the proposed sites, a Virginia Pollutant Discharge Elimination System (VPDES) Stormwater General Permit would be required.

The Department of Conservation and Recreation (DCR) did not respond to our request for comments on this proposed action. However, according to DCR guidance, federal agencies and their authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R), Virginia Stormwater Management Law and Regulations (VSWML&R), and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act Section 313, Federal Consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, or other structures, soil/dredge spoil areas, or related land conversion activities that disturb 10,000 square feet or more (2,500 square feet or more in a Chesapeake Bay Preservation Area) would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. Accordingly, the Air Force should prepare and implement erosion and sediment control (ESC) and stormwater management (SWM) plans to ensure compliance with state law. The federal agency is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and/or other mechanisms, consistent with agency policy.

Furthermore, effective 29 January 2005, House Bill 1177 transferred regulatory authority of the Virginia Pollutant Discharge Elimination System (VPDES) programs related to municipal separate storm sewer systems (MS4s) and construction activities from State Water Control Board to the Soil and Water Conservation Board and transferred oversight of these programs from DEQ to the Virginia Department of Conservation and Recreation (DCR). As such, DCR is responsible for the issuance, denial, revocation, termination and enforcement of VPDES permits for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program. DEQ will continue to manage the remaining VPDES

program. Therefore, for any land disturbing activities equal to one acre or more, the Air Force is required to apply to DCR for registration coverage under the General Permit for Discharges of Stormwater from Construction Activities. Specific questions regarding the Stormwater Management Program requirements should be directed to Mr. Eric Capps, DCR, at (804) 786-3957, e-mail eric.capps@dcr.virginia.gov.

3. Chesapeake Bay Preservation Area. The EA finds that all three of the alternative locations under the proposed action would occur within Virginia Coastal Zone (as defined by the VCP), within areas designated as Resource Management Areas (RMAs) according to the Chesapeake Bay Preservation Act (CBPA). The Air Force determined that none of the sites meet the criteria of the more protective designation of Resource Protection Area (RPA). The Air Force intends to develop the site in accordance with the general performance criteria under the CBPA (9 VAC 10-20-120).

According to DCR's Division of Chesapeake Bay Local Assistance (DCBLA), federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated Chesapeake Bay Preservation Areas. In Hampton, the areas protected by the Chesapeake Bay Act, as locally implemented requiring stringent performance criteria, include: tidal wetlands, non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow, tidal shores and a 100-foot vegetated buffer area located adjacent to and landward of the aforementioned features, and along both sides of any water body with perennial flow. Less stringent performance criteria apply to land that is contiguous to the 100-foot buffer for a distance of 100 feet in the landward direction.

The EA states that all three of the proposed alternatives occur within areas analogous to RMAs and none meet the criteria for the more protective designation of RPAs. However, Alternative A as shown in Figures 2-2 and 3-4 appear to have wetlands that may be connected by surface flow, however the figures do not provide sufficient information to verify. Should the wetlands be connected, rather than isolated, they would qualify for the more stringent performance criteria required for areas analogous to RPA.

Should Alternative A be selected as the preferred alternative, verification that the wetlands are isolated rather than connected, would be required, and areas analogous to RPA be established. The project would then be subject to the more stringent performance criteria found in §9 VAC 10-20-130 as well as the general performance criteria.

Should the project alternatives occur solely within the areas analogous to RMA, the project is consistent with the performance criteria of the Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations), as locally implemented by the City of Hampton, provided that the project adheres to the General Performance Criteria § 9 VAC 10-20-110 through § 9 VAC 10-20-120 of the *Chesapeake Bay Preservation Area Designation and Management Regulations*, especially with regard to:

- **Erosion and Sediment Control:** An Erosion and Sediment Control Plan should be developed according to the *Virginia Erosion and Sediment Control Handbook,* Third Edition, 1992.

- **Stormwater Quality Control:** Stormwater management should be consistent with the water quality provisions (§ 4 VAC 3-20-71 et seq.) of the Virginia Stormwater Management Regulations (§ 4 VAC 3-20).

4. Air Pollution Control. According to the EA (3.0 Summary of Environmental Consequences) under each proposed action alternative, additional emissions of less than 0.01 percent of all criteria pollutants, with the exception of PM_{10}, would be created during demolition and construction. In 2008, site preparation activities would contribute 0.05 percent of PM_{10} to regional air quality.

According to DEQ's Division of Air Program Coordination, the project site is in an ozone (O_3) non-attainment area and an emission control area for the contributors to ozone pollution, which are volatile organic compounds (VOCs) and oxides of nitrogen (NO_x). This has two practical consequences for project development. One is that the Air Force should take all reasonable precautions to limit emissions of VOCs and NO_x, principally by controlling or limiting the burning of fossil fuels. A second precaution, stemming from 9 VAC 5-40-5490 in the Regulations for the Control and Abatement of Air Pollution, is that there are some limitations on the use of "cut-back" (liquefied asphalt cement, blended with petroleum solvents) that may apply in the construction of roads and parking areas associated with the project. The asphalt must be "emulsified" (predominantly cement and water with a small amount of emulsifying agent) except when specified circumstances apply. Moreover, there are time-of-year restrictions on its use during the months of April through October in VOC emission control areas.

DEQ's Division of Air Program Coordination states that during construction, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

If project activities include the burning of construction or demolition material, this activity must meet the requirements under 9 VAC 5-40-5600 et seq. of the Regulations for open burning, and it

may require a permit. The Regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The Air Force should contact Hampton officials to determine what local requirements, if any, exist.

5. Solid and Hazardous Wastes and Hazardous Materials. The EA (3.0 Summary of Environmental Consequences) notes that no new waste streams would be created through implementation of the alternatives under the proposed action. Examination of asbestos-containing material and lead-based paint would occur prior to demolition and disposed according to regulations.

DEQ found that hazardous waste issues and sites were addressed adequately in the report. However, solid waste issues and sites were not addressed. Nor did the report include a search of waste-related data bases. The Waste Division staff performed a cursory review of its data files and determined that the facility is under DEQ's Federal Facilities Installation Restoration Program (VA2800005033), a Formerly Used Defense Site (VA9799F1590), and a RCRA small quantity generator of hazardous waste (VAD988222527). The following websites may prove helpful in locating additional information for these identification numbers: http://www.epa.gov/echo/search_by_permit.html or http://www.epa.gov/enviro/html/rcris/rcris_query_java.html.

Langley Air Force Base (LAFB) is on the National Priorities List (NPL) and is the party responsible for remediation of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) sites on base in order to be removed from the NPL. The LAFB Environmental Restoration Program (ERP) is charged with oversight of the CERCLA sites on Base.

All of the proposed building sites lie atop the base-wide Groundwater Site (ERP Site OT-64). Alternative A, Poplar Road, lies adjacent to and may lie within an old bombing range, Area of Concern (AOC) Range. This site has not yet been investigated under CERCLA so the extent or characteristics of any potential contamination is unknown. Alternative B, Ball Field, is not adjacent to or within any active or closed ERP sites. Alternative C, Horse Pasture, is located within 500 feet of ERP Site FT-41, a former fire training facility, which happens to be the location of the current fire training pit. In the past, the training activities used waste aviation fuel and hydraulic fluid that was poured onto the ground, ignited, and extinguished. Since 1993, propane gas has been used during fire training exercises.

The Federal Facilities Restoration Program recommends that the Air Force contact John Tice, LAFB Environmental Restoration at (757) 764-1082, for information concerning the CERCLA obligations at or near the proposed construction sites prior to initiating any land, sediment, or ground water disturbing activities.

Any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Also, all structures being demolished/renovated/ removed should be checked for asbestos-containing

materials (ACM) and lead-based paint prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed.

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

Any soil or sediment that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. For asbestos-containing materials (ACM), and if lead-based paint (LBP) is found, in addition to the Federal waste-related regulations, State regulations 9 VAC 20-80-640 for ACM and 9 VAC 20-60-261 for LBP must be followed. For more information contact Harold Winer, DEQ-Tidewater Regional Office, (757) 518-2153.

6. Pesticides and Herbicides. The use of herbicides or pesticides for landscape maintenance should be in accordance with the principles of integrated pest management. The least toxic pesticides that are effective in controlling the target species should be used. Also, we recommend that the use of pesticides or herbicides containing volatile organic compounds as their active ingredient be avoided to the maximum extent practicable in order to protect air quality. Otherwise, the use of these pesticides or herbicides should be applied outside of the ozone season. Please contact the Department of Agriculture and Consumer Services at (804) 786-3501 for more information.

7. Natural Heritage Resources. The EA (page 3-15) states that the Department of Conservation and Recreation (DCR) conducted a site survey of Langley AFB and identified no state special-status species or habitat. One bird and one plant species were identified as state rare at Langley AFB: the northern harrier and eastern bloodleaf. The EA found that no impacts associated with the implementation of the proposed alternatives are anticipated with regard to special-status species.

The Department of Conservation and Recreation (DCR) did not respond to our request for comments on the project. DCR strives to preserve and protect the environment of the Commonwealth of Virginia and advocate the wise use of its scenic, cultural, recreation and natural heritage resources. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, state unique or exemplary natural communities, significant geologic formations and similar features of scientific interest. DCR's Division of Natural Heritage (DNH) can search its Biotics Data System for occurrences of natural heritage resources in and around the project site.

Furthermore, the Virginia Department of Agriculture and Consumer Services (VDACS), which has regulatory authority to conserve rare and endangered plant and insect species through the Virginia Endangered Plant and Insect Species Act, has established a Memorandum of Agreement

with DCR. Under this Agreement DCR-DNH, in consultation with VDACS, represents VDACS in its comments and recommendations regarding the potential impact of reviewed projects or activities on state-listed plant and insect species. Although DCR did not respond, VDACS reviewed the EA prepared for the proposed action and determined that no additional comments are necessary in reference to endangered plant and insect species.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. Since new and updated information is continually added to Biotics, DEQ recommends that DCR-DNH be contacted at (804) 786-7951, to secure information on natural heritage resources before the project is implemented.

8. Wildlife Resources. According to the EA (page 3-15), wildlife on the base are wide-spread species that are habitat generalists or tolerant of disturbance and include a wide variety of game and fur-bearing animals, small mammals, waterfowl, songbirds, raptors, amphibians, reptiles, and fish.

The Department of Game and Inland Fisheries (DGIF) found that while the State Endangered canebrake rattlesnakes have not been documented at Langley AFB, the potential for their occurrence exists. Therefore, DGIF recommends that, prior to the start of construction, all contractors are trained in the identification, basic natural history, and legal status of canebrake rattlesnakes. This could be accomplished via an appropriate information sheet distributed to those working on the project (see attached). Information also can be found on DGIF's website, http://www.dgif.virginia.gov/wildlife/species/display.asp?id=030013. If a canebrake rattlesnake is observed at any time during the development or construction of this project, DGIF recommends that the Air Force contact the agency at (804) 367-8999, so that the snake may safely captured and relocated to a suitable site.

DGIF recommends that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes. DGIF generally does not support instream stormwater management ponds.

DGIF understands that Alternative B is currently maintained as a ball field, while Alternatives A and C are either completely forested or are a mixture of pasture and forest. Based on the current land cover at the sites, DGIF believes that construction of this project at Alternative B may have the smallest overall impact upon wildlife resources. Therefore, DGIF recommends Alternative B for this project.

Please note that in Table 2-1 (Page 2-11); the administering agency for the Virginia endangered species act is DGIF. DGIF has jurisdiction over all endangered wildlife species, with the exception of endangered insects.

Finally, DGIF believes this project is consistent with the fisheries management enforceable policy of the Virginia Coastal Resources Management Program.

9. Geologic Resources. The Department of Mines, Minerals, and Energy (DMME) did not indicate that project activities would have a significant impact on geology or mineral resources. For more information, contact Gerald Wilkes, (434) 951-6364.

10. Forestry Resources. According to the EA (page 3-14) only remnant patches of native upland forest vegetation are currently found within the base. Development of Alternative A would result in the removal of 10.3 acres of forest, which amounts to approximately 22.5 percent of the forested areas on base. Forest impacts from the proposed action are not anticipated at Alternative B and Alternative C.

The Virginia Department of Forestry (DOF) reviewed the EA and determined that the proposed action would have no significant impact on the forest resources of the Commonwealth. For additional information, contact Michael Foreman, DOF, at (434) 977-6555.

11. Historic Structures and Archaeological Resources. According to the EA (3.0 Summary of Environmental Consequences) architectural surveys have identified areas eligible for the National Register of Historic Places, but none would be affected by implementation of Alternative A or C. A housing area adjacent to Alternative B is eligible for the National Register of Historic Places. The Air Force acknowledges that implementation of Alternative B may require consultation with the Virginia State Historic Preservation Office (SHPO).

The Air Force must ensure that the proposed activity complies with *§106 of the National Historic and Preservation Act of 1966*, as amended, and its implementing regulation 36 CFR 800. *Section 106* requires that federal agencies must consider effects to properties that are listed or eligible for listing on the National Register of Historic Places. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources. The Air Force should consult directly with DHR to ensure compliance with *Section 106*. For coordination, contact Ms. Ethel Eaton, DHR, at (804) 367-2323.

12. Pollution Prevention. DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source. We have several pollution prevention recommendations that may be helpful in constructing or operating this project:

- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for infrastructure and building construction and design. These could include asphalt and concrete containing recycled materials, and integrated pest management in landscaping, among other things.

DEQ's Office of Pollution Prevention provides free information and technical assistance relating to pollution prevention techniques. For more information, contact DEQ's Office of Pollution Prevention, Mr. Tom Griffin at (804) 698-4545.

13. Energy Conservation. DEQ recommends that new building be designed to comply with state and federal guidelines and industry standards for energy conservation and efficiency. For example, energy efficiency of the terminal can be enhanced by maximizing the use of the following:

- Thermally efficient building shell components (roof, wall, floor, and insulation);
- High efficiency heating, ventilation, air conditioning systems;
- High efficiency lighting systems; and
- energy-efficient office and data processing equipment.

The Department of Mines, Minerals and Energy should be contacted, Gerald Wilkes (434) 951-6364.

14. Local Comments. The City of Hampton reviewed the project and found that the project scope does not appear to impact the site significantly with respect to any identified natural and cultural resources. In addition, the project does not appear to conflict with the City's current plans or policies. Furthermore, the City commends the Air Force on its decision to utilize architectural design standards in accordance with the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. For any additional information, contact James Freas, City of Hampton, at (757) 728-5233.

15. Regional Comments. The Hampton Roads Planning District Commission (HRPDC) reviewed the EA and contacted the City of Hampton regarding the project. According to the information provided, Alternative B would seem to be the best location for the proposed facility because it offers the smallest environmental impact and is the only location considered that would not require direct encroachment of wetlands. Otherwise, it appears that the proposal is generally consistent with local and regional plans and policies. Questions or comments may be directed to Arthur Collins, HRPDC, at (757) 420-8300.

Federal Consistency under the Coastal Zone Management Act

Pursuant to the Coastal Zone Management Act of 1972, as amended, federal activities located inside or outside of Virginia's designated coastal management area that can have reasonably foreseeable effects on coastal resources or coastal uses must, to the maximum extent practicable, be implemented in a manner consistent with the Virginia Coastal Resources Management Program (VCP). The VCP consists of a network of programs administered by several agencies. The DEQ coordinates the review of federal consistency determinations with agencies administering the Enforceable and Advisory Policies of the VCP.

The EA includes a consistency determination and accompanying analysis. Based on the information submitted and the comments of reviewing agencies, we concur that the proposed activity is consistent with the Virginia Coastal Resources Management Program, provided that the Air Force complies with all requirements of applicable permits and other authorizations that may be required.

Regulatory and Coordination Needs

1. Water Quality and Wetlands. Any future project impacts to surface water and wetlands may require a Virginia Water Protection (VWP) permit issued through DEQ's Tidewater Regional Office and a § 404 Clean Water Act permit issued by the U.S. Army Corps of Engineers (Corps). Required permitting may be accomplished through the submission of a Joint Permit Application (JPA) to the VMRC. If necessary, the Air Force may coordinate this activity with Harold Winer, DEQ-TRO, at (757) 518-2153.

2. Erosion and Sediment Control and Stormwater Management. The Air Force must ensure it is in compliance with Virginia's Erosion and Sediment Control Law (Virginia Code 10.1-567) and regulations (4 VAC 50-30-30 et seq.) and Stormwater Management Law (Virginia Code 10.1-603.5) and regulations (4 VAC 3-20-210 et seq.). Activities that disturb 10,000 square feet or more of land (2,500 square feet in a Chesapeake Bay Preservation Area) would be regulated by VESCL&R and those that disturb one acre or greater would be covered by VSWML&R. NASA The Air Force is encouraged to contact DCR's Chowan, Albermarle and Coastal Watersheds Office, (757) 925-2468, for assistance with developing or implementing E&S and/or Stormwater Management Plans to ensure project conformance during and after active demolition.

For land disturbing activities equal to one acre or more, the Air Force is required to apply to DCR for registration coverage under the VPDES General Permit for Discharges of Stormwater from Construction Activities. Specific questions regarding the Stormwater Management Program requirements should be directed to Mr. Eric Capps, DCR, at (804) 786-3957, e-mail eric.capps@dcr.virginia.gov.

3. Coastal Lands Management. In order to meet its obligations with regard to federal consistency under the Coastal Zone Management Act, the Air Force must coordinate project activities with DCR-DCBLA to ensure project consistency with the Chesapeake Bay Preservation

Act and coastal lands management enforceable policy of the VCP. The Air Force should contact Alice Baird, DCR-CBLA, at (804) 225-2307, to coordinate this action.

4. Air Quality Regulations. This project may be subject to air regulations administered by the Department of Environmental Quality. Regulatory requirements that may apply to project activities relate to the control of fugitive dust emissions and open burning. Fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. If project activities include the burning of construction or demolition material, either on or off site, this activity must meet the requirements under 9 VAC 5-40-5600 et seq. Whereas, the regulation provides for, but does not require, the local adoption of a model ordinance concerning open burning, the Air Force should contact City of Hampton officials to determine what local requirements, if any, exist. For more information contact Harold Winer, DEQ-Tidewater Regional Office, (757) 518-2153.

5. Solid and Hazardous Wastes. All solid waste, hazardous waste, and hazardous materials must be managed in accordance with all applicable federal, state, and local environmental regulations. Contact DEQ's Tidewater Regional Office at (757) 518-2000, concerning location and availability of suitable waste management facilities in the project area or if free product, discolored soils, or other evidence of contaminated soils are encountered.

- *Asbestos Materials.* It is the responsibility of the owner or operator of a demolition activity, prior to the commencement of the demolition, to thoroughly inspect the affected part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material (ACM). Upon classification as friable or non-friable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 et seq.). Contact the DEQ Waste Management Program for additional information, (804) 698-4021, and the Department of Labor and Industry, Dr. Clarence H. Wheeling at (804) 786-0574.

- *Lead-Based Paint.* If applicable, the proposed project must comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations. For additional information regarding these requirements contact the Department of Professional and Occupational Regulation, Mr. Thomas Perry at (804) 367-8595.

6. Natural Heritage Resources. This project should be coordinated with DCR's Division of Natural Heritage to determine any possible project impacts on natural heritage resources. Please contact, J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206.

7. Historic Resources. To ensure compliance with *Section 106 of the National Historic and Preservation Act of 1966*, the Air Force must coordinate project activities with the Virginia Department of Historic Resources. Please contact Ethel Eaton, DHR, at (804) 367-2323.

Thank you for the opportunity to review the draft Environmental Assessment for this undertaking. Detailed comments of reviewing agencies are attached for your review. Please contact John Fisher at (804) 698-4339 for clarification of these comments.

Sincerely,

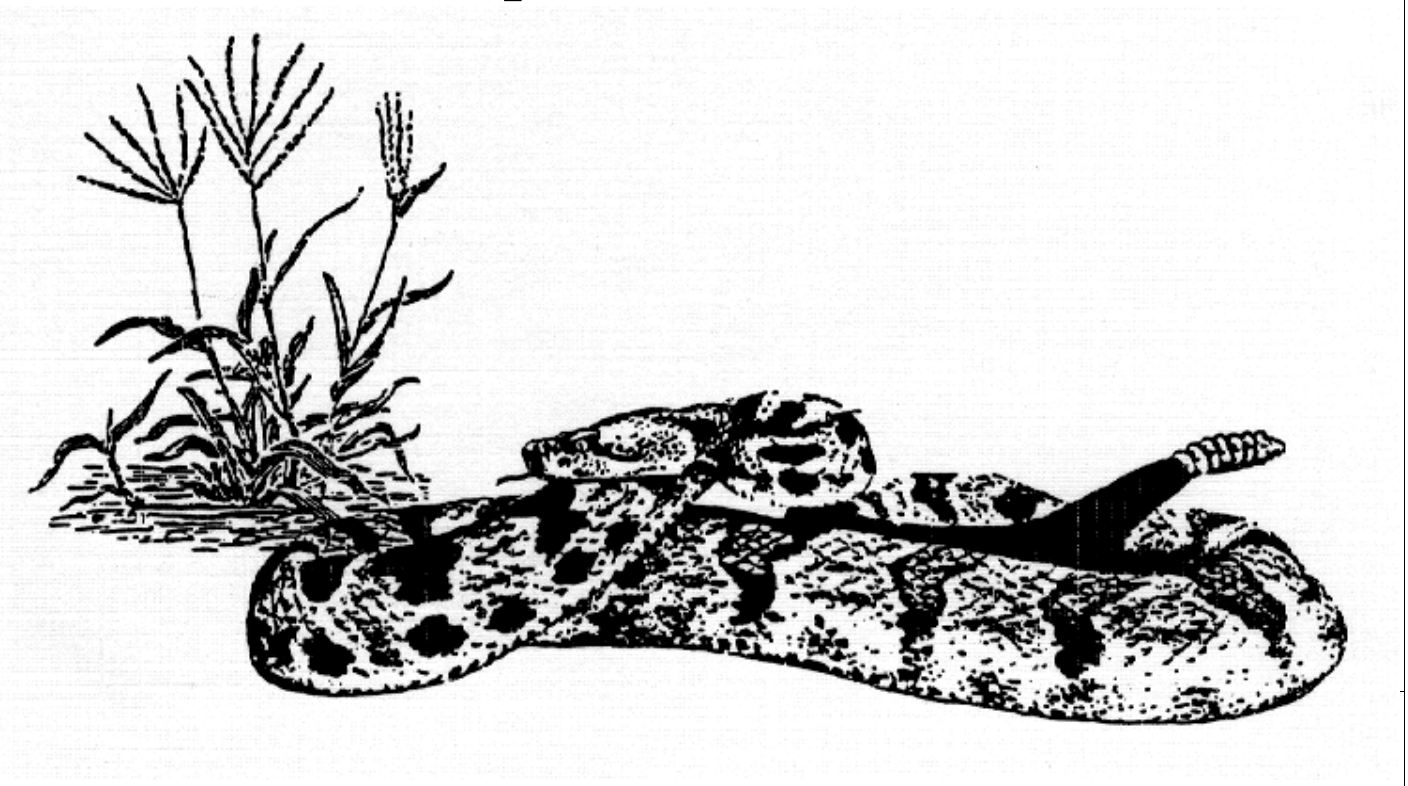
Ellie Irons, Program Manager
Office of Environmental Impact Review

Enclosures

cc: Kotur S. Narasimhan, DEQ-ADA
Allen Brockman, DEQ-ORP
Harold Winer, DEQ-TRO
Tony Watkinson, VMRC
Gerald P. Wilkes, DMME
Andrew Zadnick, DGIF
Scott Crafton, DCR
Keith R. Tignor, VDACS
Michael Foreman, DOF
Alan Weber, VDH
Ethel Eaton, DHR
George Wallace, City of Hampton
Arthur L. Collins, Hampton Roads PDC

Virginia's Wildlife

Species Profile



Canebrake Rattlesnake

Crotalus horridus atricaudatus

Status: State Endangered

Virginia Department of Game and Inland Fisheries
Wildlife Diversity Division
Nongame and Endangered Wildlife Program
4010 West Broad Street
P.O. Box 11104
Richmond, VA 23230-1104
804-367-8999

Wildlife Diversity Biologists
(I) Williamsburg: 757-253-7072
(II) Forest: 804-525-7522
(III) Blacksburg: 540-951-7923
(IV) Verona: 540-248-9360
(V) Fredericksburg: 540-899-4169

www.dgif.state.va.us

Support Virginia's Nongame Wildlife Program!
Remember the Nongame Wildlife Tax Checkoff as you do your Virginia state income taxes this year.

Virginia's Wildlife Species Profile: Canebrake Rattlesnake

Virginia Distribution: Southeastern Coastal Plain

Characteristics

The canebrake rattlesnake is a large venomous snake reaching a maximum length in Virginia of about 5 1/2 feet. As the only rattlesnake found in southeastern Virginia, it is easily identified by its distinctive black tail and rattle. The body color is usually pinkish, gray, yellow, or light brown, with brown to black chevrons. A brown or chestnut mid-dorsal stripe is usually present, as is a yellowish-gold to brown stripe from the eye to the back of the jaw. Canebrakes have a wide head with a deep pit on each side between the eye and nostril, and elliptical pupils.

Feeding

Canebrakes feed primarily on gray squirrels, and typically feed only once or twice each year. They may also capture and eat other rodents, rabbits, and birds.

Habitat and Distribution

The canebrake is a physically distinct variant of the timber rattlesnake *(Crotalus horridus)* which ranges from New England to Minnesota and south to Florida and Texas. Whether the canebrake warrants status as a subspecies is in question, but populations occurring southward from southern Missouri, western Tennessee, and southeastern Virginia are considered to represent this population.

In Virginia, while timber rattlesnakes are widespread in the mountain regions and western Piedmont, canebrakes occur only as two populations in the southeastern corner of the state. On the Lower Peninsula they occur in Hampton, Newport News, and York County; and south of the James River they are still found in Isle of Wight County, and in the Cities of Suffolk, Chesapeake, and Virginia Beach.

Figure 1. Canebrake and timber rattlesnake distribution in Virginia and the United States.

FACT: There are 30 species of snakes found in Virginia, but the canebrake rattlesnake is the only snake listed by the DGIF as endangered or threatened in the Commonwealth.

Mature hardwood forests are the preferred habitat of canebrake rattlesnakes, but the snakes also are found in mixed hardwood-pine forests, cane thickets, and in the ridges and glades of swamps. They prefer areas with numerous logs and a significant layer of leaves and humus. Canebrakes overwinter in the bases of hollow trees and stumps, and in the underground tunnels resulting from stump and root decomposition.

Reproduction

Canebrakes mature at about 4-6 years of age, and reproduce only every 2-3 years. Mating occurs in mid-summer through fall, and litters of 7-18 young are born the following August or September. The young are about 12 inches in length at birth, and resemble the adults.

Morphology: Snakes

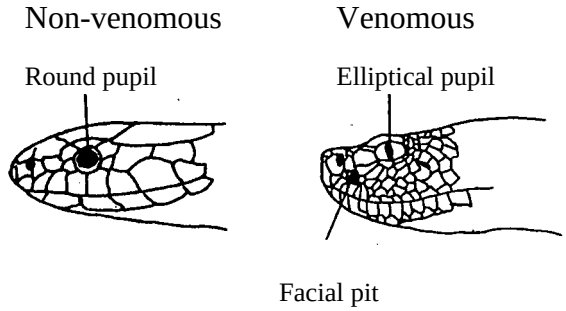


Figure 2. Facial distinctions between venomous and non-venomous snakes of Virginia.

Threats, and How You Can Help

Habitat destruction or modification, and persecution by humans, are the primary threats to canebrake rattlesnakes. Despite their reputation, most canebrakes are reluctant to bite in the wild, preferring to lay undetected among the leaf litter. They rarely rattle even when approached, but if disturbed or startled they may strike in self-defense. Most rattlesnake bites occur when humans attempt to kill, capture, or handle a snake.

If you see a rattlesnake in the wild, do not disturb it. If you are concerned about its presence, please call the local office of the Virginia Department of Game and Inland Fisheries. If a rattlesnake bites you, do not attempt to administer first aid; rather, immediately seek treatment for snakebite at a medical facility.

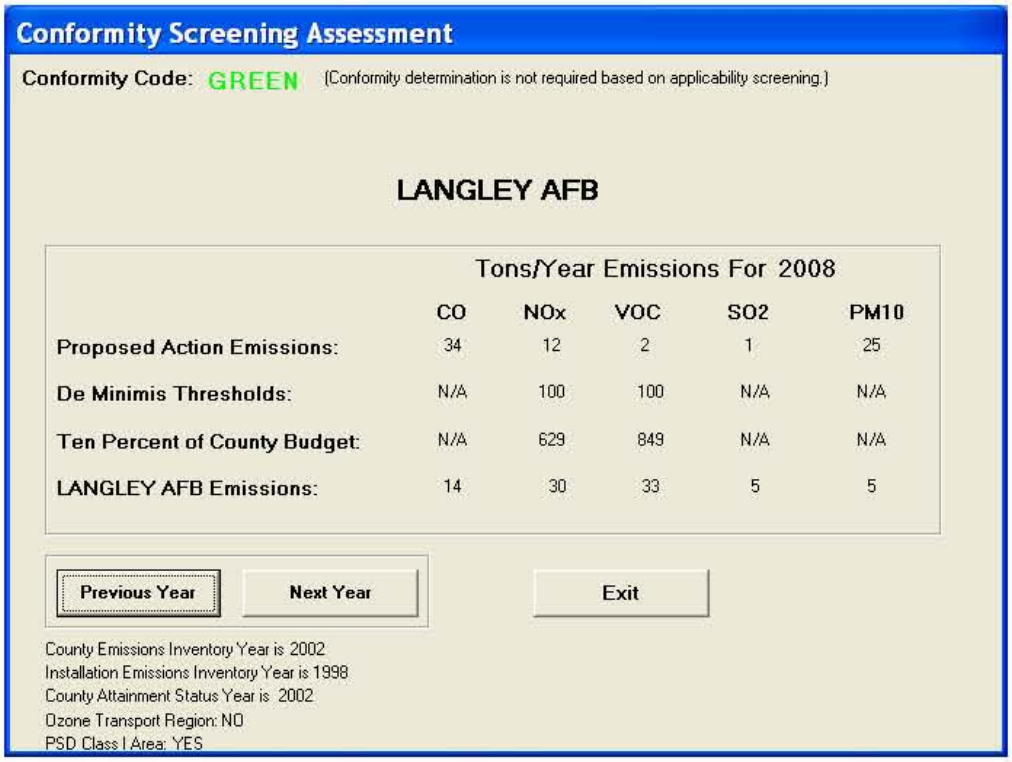
For additional information, consult *A Guide to Endangered and Threatened Species in Virginia* by K. Terwilliger and J.R. Tate, or *The Reptiles of Virginia* by Joseph C. Mitchell.

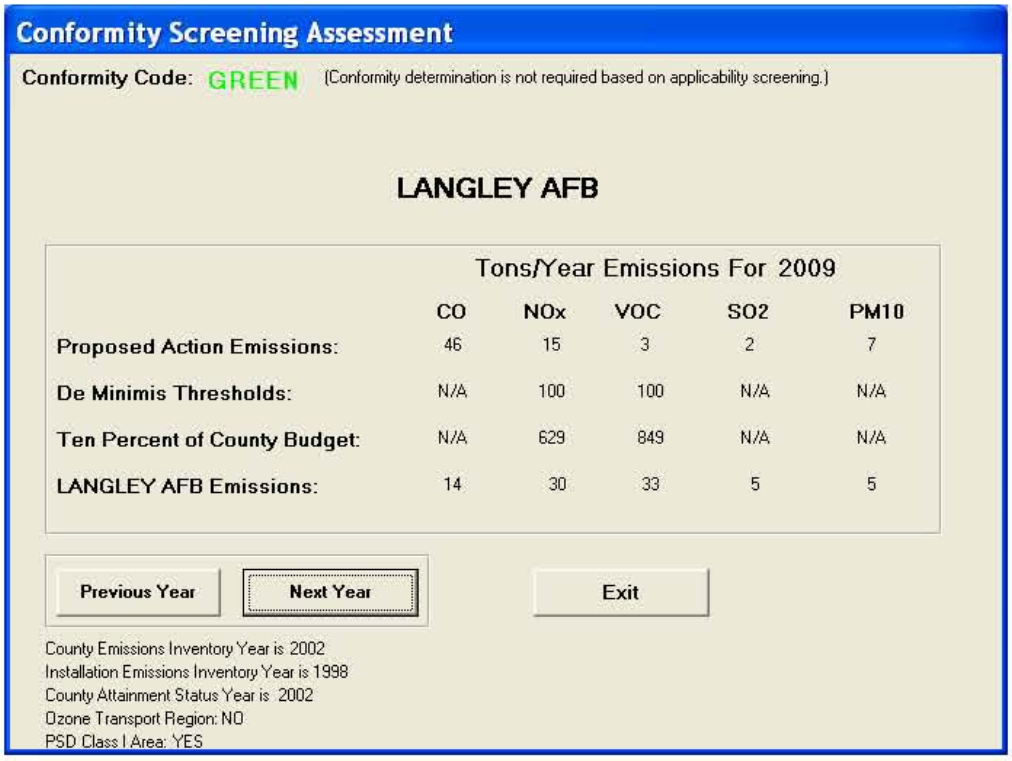
Citation: Fernald, RT. 1999. Canebrake rattlesnake: *Crotalis horridus atricaudatus*. Virginia's wildlife species profile No. 030013.1 (Fernald RT, series editor). Richmond: Virginia Department of Game and Inland Fisheries.

APPENDIX B

AIR QUALITY ANALYSIS

Criteria Pollutant Conformity Assessment





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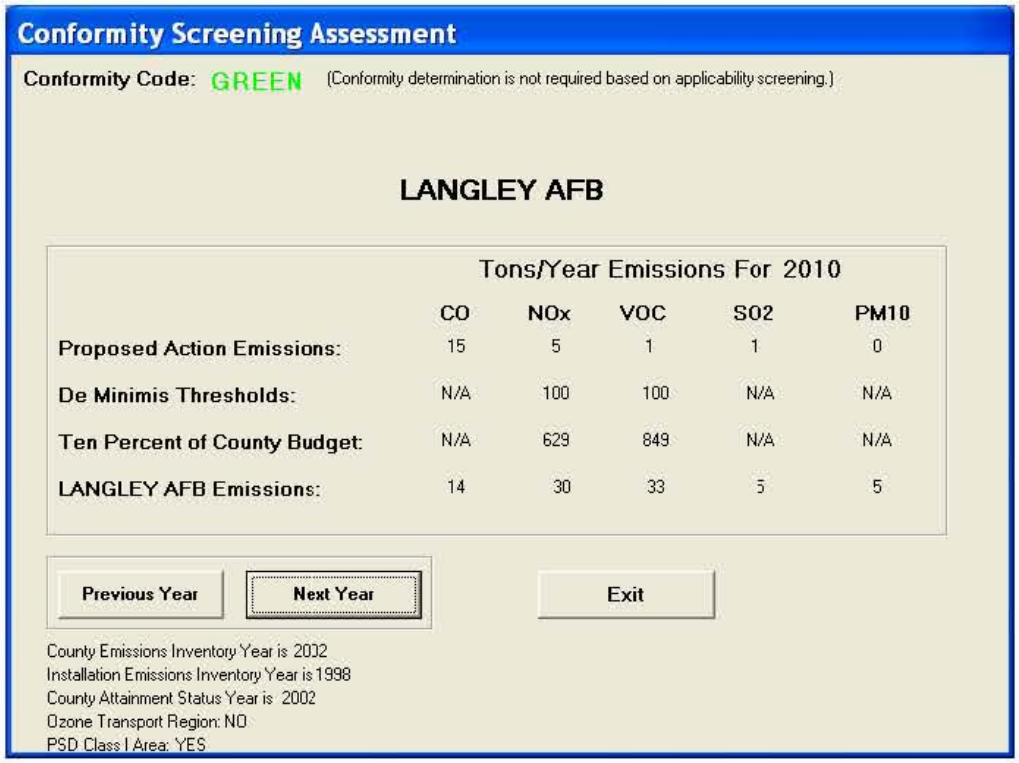
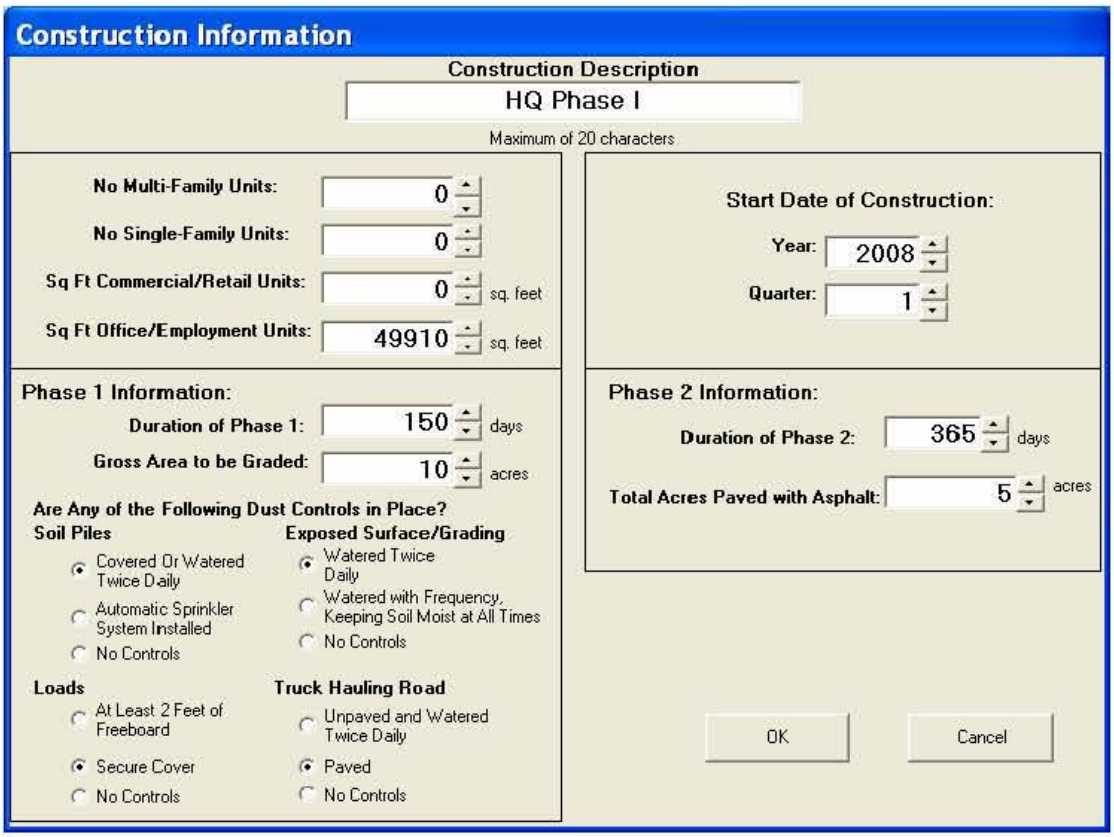
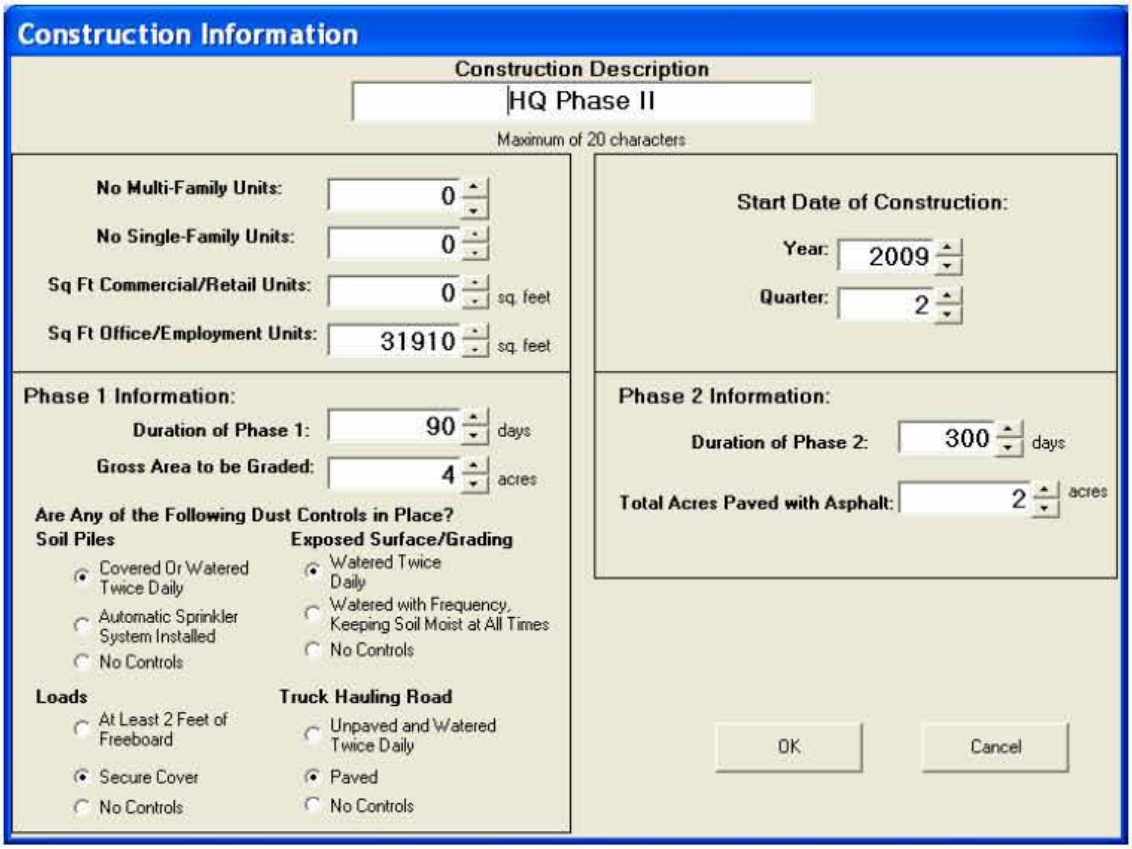


Air Quality Input Data in ACAM 4.0.3





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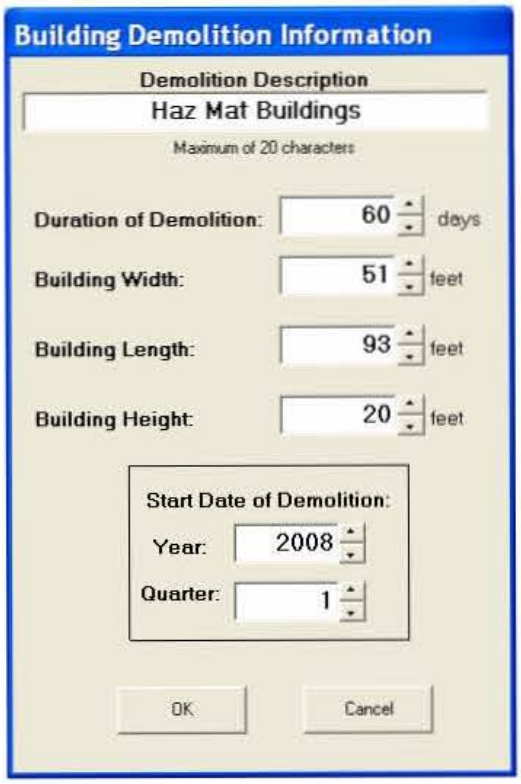

USAF Air Conformity Applicabilty Model
Emissions Summary Information

Scenario: AFC2ISRC

Installation: LANGLEY AFB

Emissions Summary Report For 2008

Source Category	Emissions, Tons/Year CO	NOX	SO2	VOC	PM10
Area Sources					
Demolition	0.00	0.00	0.00	0.00	0.02
Other Phase I Const. - Grading Equip.	0.41	1.55	0.16	0.17	0.13
Other Phase I Const. - Grading Ops.	0.00	0.00	0.00	0.00	23.86
Other Phase II Const. - Acres Paved	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Mobile Equip.	4.18	9.98	1.23	0.91	0.80
Other Phase II Const. - Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.11	0.00
Other Phase II Const. - Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Stationary Equip.	28.38	0.74	0.04	1.06	0.02
Other Phase II Const. - Workers Trips	0.59	0.03	0.00	0.04	0.00
Total	33.57	12.30	1.43	2.29	24.83
Grand Total	**33.57**	**12.30**	**1.43**	**2.29**	**24.83**

USAF Air Conformity Applicabilty Model
Emissions Summary Information

Scenario: AFC2ISRC

Installation: LANGLEY AFB

Emissions Summary Report For 2009

Source Category	Emissions, Tons/Year CO	NOX	SO2	VOC	PM10
Area Sources					
Other Phase I Const. - Grading Equip.	0.10	0.37	0.04	0.04	0.03
Other Phase I Const. - Grading Ops.	0.00	0.00	0.00	0.00	5.73
Other Phase II Const. - Acres Paved	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Mobile Equip.	5.78	13.79	1.71	1.26	1.11
Other Phase II Const. - Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.17	0.00
Other Phase II Const. - Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Stationary Equip.	39.23	1.02	0.05	1.47	0.03
Other Phase II Const. - Workers Trips	0.82	0.05	0.00	0.05	0.01
Total	45.92	15.23	1.80	3.00	6.90
Point Sources					
Other Const. - Facility Heating	0.09	0.11	0.00	0.01	0.01
Total	0.09	0.11	0.00	0.01	0.01
Grand Total	**46.01**	**15.34**	**1.80**	**3.00**	**6.91**

USAF Air Conformity Applicabilty Model
Emissions Summary Information

Scenario: AFC2ISRC

Installation: LANGLEY AFB

Emissions Summary Report For 2010

Source Category	Emissions, Tons/Year CO	NOX	SO2	VOC	PM10
Area Sources					
Other Phase II Const. - Acres Paved	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Mobile Equip.	1.81	4.31	0.53	0.39	0.35
Other Phase II Const. - Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.06	0.00
Other Phase II Const. - Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Stationary Equip.	12.25	0.32	0.02	0.46	0.01
Other Phase II Const. - Workers Trips	0.25	0.01	0.00	0.01	0.00
Total	14.31	4.64	0.55	0.93	0.36
Point Sources					
Other Const. - Facility Heating	0.29	0.35	0.00	0.02	0.03
Total	0.29	0.35	0.00	0.02	0.03
Grand Total	**14.60**	**4.99**	**0.55**	**0.94**	**0.38**

USAF Air Conformity Applicability Model

Conformity Screening

Scenario: AFC2ISRC

Installation : LANGLEY AFB

Conformity Code GREEN (Conformity determination is not required based on applicability screening.)

LANGLEY AFB

Tons/Year Emissions For 2008

	CO	NOX	VOC	SO2	PM10
Proposed Action Emissions:	33	12	2	1	24
De Minimis Thresholds:	N/A	100	100	N/A	N/A
Ten Percent of County Budget:	N/A	629.4	849.1	N/A	N/A
LANGLEY AFB Emissions:	14.46	29.79	32.84	4.56	4.56

County Emisssions Inventory Year is 2002

Installation Emissions Inventory Year 1998

County Attainment Status Year is 2002

This installation is within 50 km of a PSD Class 1 Area.

Point of Contact Information

Air Agency/AQCD DEPARTMENT OF ENVIRONMENTAL QUALITY - AIR DIVISION

Person: FRANCIS DANIEL **Phone:** 804-424-6707

USAF Air Conformity Applicability Model

Conformity Screening

Scenario: AFC2ISRC

Installation : LANGLEY AFB

Conformity Code GREEN (Conformity determination is not required based on applicability screening.)

LANGLEY AFB

Tons/Year Emissions For 2009

	CO	NOX	VOC	SO2	PM10
Proposed Action Emissions:	46	15	3	1	6
De Minimis Thresholds:	N/A	100	100	N/A	N/A
Ten Percent of County Budget:	N/A	629.4	849.1	N/A	N/A
LANGLEY AFB Emissions:	14.46	29.79	32.84	4.56	4.56

County Emisssions Inventory Year is 2002

Installation Emissions Inventory Year 1998

County Attainment Status Year is 2002

This installation is within 50 km of a PSD Class 1 Area.

Point of Contact Information

Air Agency/AQCD DEPARTMENT OF ENVIRONMENTAL QUALITY - AIR DIVISION

Person: FRANCIS DANIEL **Phone:** 804-424-6707

USAF Air Conformity Applicability Model

Conformity Screening

Scenario: AFC2ISRC

Installation : LANGLEY AFB

Conformity Code GREEN (Conformity determination is not required based on applicability screening.)

LANGLEY AFB

Tons/Year Emissions For 2010

	CO	NOX	VOC	SO2	PM10
Proposed Action Emissions:	14	4	0	0	0
De Minimis Thresholds:	N/A	100	100	N/A	N/A
Ten Percent of County Budget:	N/A	629.4	849.1	N/A	N/A
LANGLEY AFB Emissions:	14.46	29.79	32.84	4.56	4.56

County Emisssions Inventory Year is 2002

Installation Emissions Inventory Year 1998

County Attainment Status Year is 2002

This installation is within 50 km of a PSD Class 1 Area.

Point of Contact Information

Air Agency/AQCD DEPARTMENT OF ENVIRONMENTAL QUALITY - AIR DIVISION

Person: FRANCIS DANIEL **Phone:** 804-424-6707

USAF Air Conformity Applicability Model

Conformity Screening

Scenario: AFC2ISRC

Installation : LANGLEY AFB

Conformity Code GREEN (Conformity determination is not required based on applicability screening.)

LANGLEY AFB

Tons/Year Emissions For 2011

	CO	NOX	VOC	SO2	PM10
Proposed Action Emissions:	0	0	0	0	0
De Minimis Thresholds:	N/A	100	100	N/A	N/A
Ten Percent of County Budget:	N/A	629.4	849.1	N/A	N/A
LANGLEY AFB Emissions:	14.46	29.79	32.84	4.56	4.56

County Emisssions Inventory Year is 2002

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