

# RDECOM Tower Construction at Brandywine Communication Receiver Site

Andrews Air Force Base, MD



**U.S. AIR FORCE**

Environmental Impact Analysis Process

## Report Documentation Page

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Finding  
of No Significant Impact



**U.S. AIR FORCE**

## **FINDING OF NO SIGNIFICANT IMPACT**

### **Environmental Assessment for Tower Construction at the Brandywine Communication Receiver Site, Prince George's County, Maryland**

#### **INTRODUCTION**

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S. Code (USC) §§4321 et seq.; Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) §1500-1508; and Environmental Impact Analysis Process, 32 CFR §989. The decision in this FONSI is based upon information contained in the Environmental Assessment (EA). The EA analyzed potential environmental consequences from implementation of the Proposed Action, action alternatives, and the no action alternative and is hereby incorporated by reference.

The U.S. Army Research, Development and Engineering Command (RDECOM) proposes to construct an 824-foot tower at the Brandywine Communications Receiver Site, which is owned and operated by the 789<sup>th</sup> Communications Squadron, Andrews Air Force Base (AFB), Maryland. This is a non-Air Force proposal that must be forwarded to the HQ AMC Environmental Planning Function (EPF) for approval in accordance with 32 CFR §989.14(j)(1). The advent of the global war on terrorism and ongoing homeland security mission analyses have highlighted a need to refine the communications infrastructure in the National Capital Region, the geographic area containing military installations in the Washington, D.C. region. The Proposed Action is needed to identify a location on the Brandywine Site for construction of a communications tower necessary to support national security objectives. Identifying a location that can be used to support national security interests is the primary objective for the action. Secondary objectives are to construct and operate a communications facility as part of the Department of Defense (DOD) communications infrastructure.

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

Four alternatives were considered. The Proposed Action is to install the tower southeast of the central building facility on the Brandywine Site. The action alternatives are to install the tower

southwest and northwest of the central building facility. Under the no action alternative, no tower construction would occur on the Brandywine Site.

A U.S. Army RDECOM alternative analysis ranked the Brandywine Site highest out of 19 sites based on six element criteria that the communications tower must: (1) be on land owned and controlled by DoD for force protection and security requirements; (2) be on a site afforded vehicular access without necessity of construction of access roads; (3) be in an open area that prevents shadowing of signals and allows for requisite stand-off areas in the event of a tower collapse as well as for guy wires to support the tower; (4) lie outside of an established or proposed flight corridor thereby allowing for construction at an optimal height in excess of 800 feet above ground level; (5) be located in the National Capital Region; and (6) be supported by a military installation communications squadron or group. The no action alternative is carried forward for analysis in accordance with 32 CFR §989.8(d).

The proposed construction activities would be composed of five components. The 824-foot tower would be constructed in a typical configuration using prefabricated building materials. The existing access road would be improved for the transport of heavy equipment during construction. Up to five small (400 square feet each) prefabricated storage buildings would be placed at the site to support office administration and communications maintenance and testing equipment. Water, sewage, communications, and electrical utilities would be extended from existing lines located at the central building facility. As part of the proposed construction contract award, the successful bidder would be required to prepare and implement environmental controls. Plans and permits would be submitted to the contracting officer at Andrews AFB for approval prior to implementation of the action.

The following specific environmental controls and measures will be implemented in conjunction with the Proposed Action to avoid or minimize potential environmental effects in the vicinity of the project area:

- Best Management Practices (BMPs) described in the Andrews AFB Stormwater Pollution Prevention Plan will be implemented to reduce runoff, erosion, and sedimentation associated with all construction activities. The BMPs will include installation of silt

fences, use of straw bales, sediment traps, application of water sprays, and seeding distributed soils. In addition the proposed access road improvements would benefit soil resources during construction activities by stabilizing the road surface and further reducing the potential for soil erosion

- Any construction contract award will require the successful bidder to submit environmental control plans and permits to the contracting officer at Andrews AFB for approval.
- All construction activities will be coordinated with the natural and cultural resources manager at Andrews AFB prior to mobilization.
- Placement of tower guy wires will be adjusted to avoid construction and disturbance to any wetlands or small tributaries through on-site coordination with the Andrews AFB natural resources manager prior to the action.
- To minimize the potential impact on migratory birds, the tower construction siting guidelines of the U.S. Fish and Wildlife Service would be followed, although Federal Aviation Administration requirements for warning and obstruction lighting would be used to minimize the potential for aircraft accidents.
- To minimize potential impacts to state-listed endangered plant species, the Andrews AFB natural resources manager would coordinate with the Maryland Department of Natural Resources Wildlife Heritage Section prior to the initiation of the Proposed Action.
- All environmental controls implemented would comply with the regulations of the Maryland Department of Environment and Maryland Department of Natural Resources governing protection of environmental resources.


## **DECISION**

Based on the review of the facts and analysis in the EA, including comments received from local, state, and federal agencies as well as public comments, I conclude that the Proposed Action will

not have a significant impact to the human or natural environment either by itself or considering cumulative impacts. *The Washington Examiner* published a Notice of Availability on March 15, 16, and 17, 2005, and the Air Force placed a copy of the Draft EA and FONSI documents in area public libraries to provide for a 30-day public comment period ending April 15, 2005. For each environmental resource or issue, anticipated direct and indirect effects were assessed considering both short-term and long-term project effects. Although implementation of the Proposed Action would have minor, short-term impacts on the existing environment, the specific measures described previously will be undertaken to further reduce these effects. The analysis for this EA indicates that the Proposed Action would not result in, or contribute to, significant negative cumulative impacts to the resources in the site or region.

## CONCLUSION

In accordance with the requirements of the National Environmental Policy Act and implementing regulations of the Council on Environmental Quality and Air Force Environmental Impact Analysis Process, I conclude that the Proposed Action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not necessary and will not be prepared.

Approved:   
CHRISTOPHER A. KELLY  
Lieutenant General, USAF  
Vice Commander

Date: 18 Nov 2005

Attachment: Environmental Assessment



**STAFF SUMMARY SHEET**


	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	JA	Coord	Col Kellogg, 9 Sep 05	6	CVE	Coord	Lt Col Delapp, 17 Nov 05
2	PA	Coord	Col (S) Woodyard, 6 Sep 05	7	CV	Sign	Kelly, Lt Gen (10/11)
3	SE	Coord	Col Miller, 8 Sep 05	8			
4	SG	Coord	Col La Kier, 6 Sep 05	9			
5	A6	Coord	Col Taglieri, 8 Sep 05	10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
Mr. Mark Fetzer, Contr	A75C	229-0843		

SUBJECT	DATE
Final Environmental Assessment for RDECOM Tower Construction (Brandywine), Andrews AFB, MD	20051109

**SUMMARY**

- PURPOSE:** The purpose of this SSS is to request HQ AMC/CV sign the Finding of No Significant Impact (FONSI) for RDECOM Tower Construction at Brandywine Communication Receiver Site near Andrews AFB, MD.
- SUMMARY/BACKGROUND:** The purpose of the proposed action is to construct an 824-foot communications tower at the Brandywine Communications Receiver Site, in Prince George's County, Maryland, near Andrews AFB. The advent of the Global War on Terrorism and ongoing Homeland Security mission analyses highlight the need to refine the communications infrastructure of the National Capital Region. The Environmental Assessment (EA) to analyze potential environmental consequences associated with the U.S. Army Research, Development and Engineering Command (RDECOM) proposed action was funded by RDECOM and prepared by 89 CES/CEV in coordination with AMC as host command.
  - The proposed action is subject to the Air Force Environmental Impact Analysis Process (EIAP) contained in Title 32 Code of Federal Regulations (CFR) Part 989. Specifically, 32 CFR 989.14(a) and (c), direct the host base Environmental Planning Function (EPF), 89 CES/CEV, to support the proponent-requester, RDECOM, in the preparation of an EA sufficient to analyze and determine whether to prepare either an Environmental Impact Statement (EIS), FONSI, or a decision to take no action on the proposal. These documents were submitted for 2-digit review prior to this request for signature approval of the decision document (FONSI) by AMC/CV. (Tabs 1 and 2)
  - The EIAP for the proposed action included a 30-day Notice of Availability (NOA) public review period (15 Mar to 15 Apr 05) on the draft EA and FONSI IAW 32 CFR 989.15 and 24 from the public and local, state, and Federal agencies. (Tab 3)
- HQ AMC/JA review found this proposed action, environmental documentation, and finding legally sufficient. (Tab 4)
- AF/ILE approved this RDECOM beddown request on 21 Jun 05, subject to approval of the proposed action IAW the National Environmental Policy Act (NEPA) and Air Force EIAP. (Tab 5)
- VIEWS OF OTHERS:** Comments received in 2-digit coordination were addressed and all issues incorporated in these documents. Comments already identified in previous reviews have been incorporated into this Final EA and FONSI.
- RECOMMENDATION:** AMC/CV sign the FONSI at Tab 1.

  
 DEL EULBERG  
 Brigadier General, USAF  
 Director, Installation & Mission Support

- 5 Tabs
- FONSI for RDECOM Tower Construction near Andrews AFB
  - Final EA for RDECOM Tower Construction near Andrews AFB
  - Notice of Availability
  - HQ AMC/JA Legal Review
  - AF/ILE Approval of Beddown Request for RDECOM Tower

SP3114/2007/PLM 

**FINAL**

**Environmental Assessment for Tower Construction at the Brandywine Communication  
Receiver Site, Prince George's County, Maryland**



**Prepared for:**

**89<sup>th</sup> CEVP  
Andrews Air Force Base, Maryland**

**Prepared by:**

**Geo-Marine, Inc.  
11846 Rock Landing Drive, Suite C  
Newport News, Virginia 23606**

**May 2005**



**FINAL**

**Environmental Assessment for Tower Construction at the Brandywine Communication  
Receiver Site, Prince George's County, Maryland**

**Prepared for:**

**89<sup>th</sup> CEVP  
Andrews Air Force Base, Maryland**

**Prepared by:**

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**May 2005**



**Cover Sheet****Environmental Assessment for Tower Construction at the Brandywine Communication Receiver Site, Prince George's County, Maryland**

**Lead Agency:** Department of the Air Force

**Proposed Action:** Tower Construction

Written comments and inquiries regarding this document should be directed to: Mr. Keith Harris, 89 CES/CEVP, 1419 Menoher, Andrews Air Force Base, Maryland 20762-4803, (301) 981-1653.

**Report Designation:** Environmental Assessment (EA)

**Abstract:** The U.S. Army Research, Development and Engineering Command (RDECOM) proposes to construct an 824-foot tower at the Brandywine Communications Receiver Site, which is owned and operated by the 789<sup>th</sup> Communications Squadron, Andrews Air Force Base (AFB), Maryland. The advent of the global war on terrorism and ongoing homeland security mission analyses have highlighted a need to refine the communications infrastructure in the National Capital Region, the geographic area containing military installations in the Washington, D.C. region. Four alternatives were considered. The proposed action is to install the tower southeast of the central building facility on the Brandywine Site. The action alternatives are to install the tower southwest and northwest of the central building facility. Under the no action alternative, no tower construction would occur on the Brandywine Site.

This EA identifies and analyzes potential effects on the natural and human environment in sufficient detail to determine the significance of impacts on the affected environment. The proposed action would be conducted on the Brandywine Site. The potential environmental effects of the proposed action would be those associated with tower construction and operation of associated facilities. Although construction and installation activities would affect the natural and human environment, impacts would be short-term and minor with no adverse cumulative impacts.

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## **FINDING OF NO SIGNIFICANT IMPACT**

### **Environmental Assessment for Tower Construction at the Brandywine Communication Receiver Site, Prince George's County, Maryland**

#### **INTRODUCTION**

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S. Code (USC) §§4321 et seq.; Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) §1500-1508; and Environmental Impact Analysis Process, 32 CFR §989. The decision in this FONSI is based upon information contained in the Environmental Assessment (EA). The EA analyzed potential environmental consequences from implementation of the proposed action, action alternatives, and the no action alternative and is hereby incorporated by reference.

The U.S. Army Research, Development and Engineering Command (RDECOM) proposes to construct an 824-foot tower at the Brandywine Communications Receiver Site, which is owned and operated by the 789<sup>th</sup> Communications Squadron, Andrews Air Force Base (AFB), Maryland. This is a non-Air Force proposal that must be forwarded to the HQ AMC Environmental Planning Function (EPF) for approval in accordance with 32 CFR §989.14(j)(1). The advent of the global war on terrorism and ongoing homeland security mission analyses have highlighted a need to refine the communications infrastructure in the National Capital Region, the geographic area containing military installations in the Washington, D.C. region. The proposed action is needed to identify a location on the Brandywine Site for construction of a communications tower necessary to support national security objectives. Identifying a location that can be used to support national security interests is the primary objective for the action. Secondary objectives are to construct and operate a communications facility as part of the Department of Defense (DoD) communications infrastructure.

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

Four alternatives were considered. The proposed action is to install the tower southeast of the central building facility on the Brandywine Site. The action alternatives are to install the tower



southwest and northwest of the central building facility. Under the no action alternative, no tower construction would occur on the Brandywine Site.

A U.S. Army RDECOM alternative analysis ranked the Brandywine Site highest out of 19 sites based on six element criteria that the communications tower must: (1) be on land owned and controlled by DoD for force protection and security requirements; (2) be on a site afforded vehicular access without necessity of construction of access roads; (3) be in an open area that prevents shadowing of signals and allows for requisite stand-off areas in the event of a tower collapse as well as for guy wires to support the tower; (4) lie outside of an established or proposed flight corridor thereby allowing for construction at an optimal height in excess of 800 feet above ground level; (5) be located in the National Capital Region; and (6) be supported by a military installation communications squadron or group. The no action alternative is carried forward for analysis in accordance with 32 CFR §989.8(d).

The proposed construction activities would be composed of five components. The 824-foot tower would be constructed in a typical configuration using prefabricated building materials. The existing access road would be improved for the transport of heavy equipment during construction. Up to five small (400 square feet each) prefabricated storage buildings would be placed at the site to support office administration and communications maintenance and testing equipment. Water, sewage, communications, and electrical utilities would be extended from existing lines located at the central building facility. As part of the proposed construction contract award, the successful bidder would be required to prepare and implement environmental controls. Plans and permits would be submitted to the contracting officer at Andrews AFB for approval prior to implementation of the action.

## **DECISION**

Based on the review of the EA, I have decided to proceed with the proposed tower construction at the Brandywine Site. The potential impacts to the human and natural environment were evaluated relative to the existing environment. For each environmental resource or issue, anticipated direct and indirect effects were assessed considering both short-term and long-term project effects. Although implementation of the proposed action would affect the human and

natural environment, only short-term and minor impacts would be expected. Overall, the analysis for this EA indicates that the proposed action would not result in, or contribute to, significant negative cumulative impacts to the resources in the region.

## **CONCLUSION**

In accordance with the CEQ regulations implementing NEPA and the Air Force Environmental Impact Analysis Process, I conclude that the proposed action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.

Approved: \_\_\_\_\_ Date: \_\_\_\_\_,

John R. Baker, Lt. General, USAF

Vice Commander

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## EXECUTIVE SUMMARY

### **Environmental Assessment for Tower Construction at the Brandywine Communication Receiver Site, Prince George's County, Maryland**

#### **INTRODUCTION**

The U.S. Army Research, Development, and Engineering Command (RDECOM) proposes to construct in 2005 a 824-foot tower on the Brandywine Communication Receiver Site (Brandywine Site) in Prince George's County, Maryland. The site is owned and operated by the 789<sup>th</sup> Communications Squadron, Andrews Air Force Base (AFB), Maryland. This Environmental Assessment (EA) has been prepared to assess the potential impacts associated with the proposed action as required under the provisions of the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] §4321).

The Brandywine Site is 1,635 acres located six miles south of Andrews AFB, east of U.S. Route 5, and 3 miles north of the town of Mattawoman. The Brandywine Site contains an antenna field that serves as a communications relay site supporting Andrews AFB and other users.

#### **PURPOSE AND NEED**

The advent of the global war on terrorism and ongoing homeland security mission analyses have highlighted a need to refine the communications infrastructure in the National Capital Region, the geographic area containing military installations in the Washington, D.C. region. The purpose of the action is to upgrade the Brandywine Site so that this need is met.

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

To be considered a viable alternative, the location for the communications tower must: (1) be on Department of Defense land for force protection and security requirements; (2) be on a site afforded vehicular access without necessity of construction of access roads; (3) be in an open area that prevents shadowing of signals and allows for requisite stand-off areas in the event of a tower collapse as well as for guy wires to support the tower; (4) lie outside of an established or

proposed flight corridor thereby allowing for construction at an optimal height in excess of 800 feet above ground level; (5) be located in the National Capital Region, and (6) be supported by a military installation communications squadron or group.

The U.S. Army RDECOM considered 18 other federal facilities and ranked the Brandywine Site highest according to the alternative selection criteria to locate the proposed tower. The alternative locations were not considered viable according to the alternative selection criteria and security and technical requirements specified by the U.S. Army RDECOM. This EA is being conducted on four Brandywine alternatives.

### **Proposed Action - Southeast Tower Placement**

The U.S. Army RDECOM, in consultation with the 789<sup>th</sup> Communications Squadron, proposes to build and operate a communications facility in the southeast portion of the Brandywine Site. The proposed action is composed of the following components.

Construct Tower. The proposed tower would be constructed in a typical configuration using prefabricated building materials. Three sets of guy wires would be placed 120 degrees apart and radiate outward up to 1,000 feet from the tower's center. Four additional sets of wires would be offset from the plane of the primary guy wire sets.

Improve Access Road. The proposed tower would be sited approximately 2,000 feet from the existing central building facility. An existing gravel and stone access road runs from the central building facility to within 300 feet of the proposed tower. A thin layer of crusher run stone would be added to improve the access road for the transport of heavy equipment during construction activities. The access road would be extended the remaining 300 feet through an existing field to the proposed tower.

Install Portable Storage Buildings. Up to five small (400 square feet each) prefabricated storage buildings would be placed at the site to house office administration and communications maintenance and testing equipment. Each building would be placed on a gravel pad. After approximately three years of testing, three of the small buildings would be removed and two small buildings would remain onsite for storage of electrical equipment and supplies.

Connect Utilities. Water, sewage, communications, and electrical utilities required for operation of the communications facility would be extended 2,000 feet from existing lines located at the central building facility. Utilities would be buried 2 feet deep alongside the access road from the central building facility to the project site. A stand-by natural gas or diesel fueled generator would provide backup power in the event of an electrical outage.

Implement Environmental Controls. As part of the proposed construction contract award, the successful bidder would be required to submit environmental control plans and permits to the contracting officer at Andrews AFB for approval. Prior to construction activities, coordination with the natural and cultural resources manager at Andrews AFB would be required. Implementation of environmental controls would comply with Maryland Department of Environment and Maryland Department of Natural Resources regulations governing the protection of environmental resources.

### **Alternative 1 - Southwest Tower Placement**

The U.S. Army RDECOM is considering constructing the proposed tower approximately 1,500 feet southwest of the central building facility. The design of the communications tower and associated facilities would be identical to that of the proposed action. The access road would be extended approximately 900 feet to implement this alternative. Utilities would be extended 1,500 feet from the central building facility. Implementation of environmental controls would be the same as described for the proposed action.

### **Alternative 2 - Northeast Tower Location**

The U.S. Army RDECOM considering constructing the proposed tower approximately 2,500 feet northeast of the central building facility. The design of the tower and associated facilities would be identical to that of the proposed action. The access road would be extended approximately 250 feet to implement this alternative. A 2,500-foot extension of buried utilities would also occur as part of this action. Implementation of environmental controls would be the same as described for the proposed action.

## **No Action Alternative**

As required under 32 CFR §989.8(d), the no action alternative is carried forward for analysis in order to provide a baseline examination of the existing conditions. Under the no action alternative, no tower construction would occur on the Brandywine Site.

## **ENVIRONMENTAL CONSEQUENCES**

Temporary and minor impacts would be expected from implementing the action. Under the no action alternative, there would be no change to the baseline conditions for the resources evaluated.

Air Quality and Noise. Potential short-term effect from combustion emissions and fugitive dust due to construction activities; emissions would be below *de minimis* levels. Potential short-term and negligible noise effects from construction activities. No sensitive receptors would be exposed to construction noise.

Wastes, Hazardous Materials, and Stored Fuels. Potential short-term and negligible effect from construction activities. All activities would be conducted in accordance with the Hazardous Materials Planning and Response Plan; Hazardous Waste Management Plan; and Spill Prevention, Control, and Countermeasures Plan for Andrews AFB.

Water and Biological Resources. No impact would be expected to watershed, floodplain, surface waters, and wetland resources. A 1993 Air Force wetland inventory indicated that wetlands would not be affected by the proposed construction activities; however, an onsite wetland delineation by the Andrews AFB natural resources manager would be conducted prior to the action to ensure against impacting wetlands in the vicinity of the project area. Potential short-term and minor effect to vegetation and wildlife; impacts to migratory birds would be minimized by following U.S. Fish and Wildlife Service guidelines on tower siting. The Andrews AFB natural resources manager would coordinate with the Maryland Department of Natural Resources, Wildlife and Heritage Service to develop methods to minimize impacts to rare plants in the area. No impact to threatened or endangered species would be expected.

Socioeconomic Resources, Cultural Resources, Land Use, Transportation Systems, Airspace/Airfield Operations, and Environmental Justice. No effect on demographics would be expected. No impact to known archaeological or historic resources would be expected. The existing land use would not change. Transportation systems as well as airspace/airfield operations would be unaffected. The action would not cause disproportionate impacts to localized minority and/or low-income populations.

Safety and Occupational Health and Environmental Management. A Health and Safety Plan would be implemented to protect worker health and safety. Potential short term and minor impacts to pollution prevention, geology, and soils would be expected. Construction debris would be managed in accordance with the Andrews AFB Pollution Prevention Plan. Best management practices would be implemented to avoid or minimize erosion and sedimentation.

Indirect and Cumulative Impacts. No impact on the environment from the proposed construction activities when added to past, present, and reasonably foreseeable future actions would be expected to result in adverse indirect and cumulative impacts.

Unavoidable Adverse Impacts. Potential impacts on resources would be short-term and minor in order to accomplish the required construction activities. No long-term adverse impacts would be expected.

Relationship Between Short-Term Uses and Enhancement of Long-Term Productivity. The action represents an enhancement of the communications capabilities at the Brandywine Site. Immediate and long-term benefits would be realized from improvements in the DoD communications infrastructure.

Irreversible and Irretrievable Commitment of Resources. The action would result in a negligible irreversible commitment of resources for vegetation, fill materials, and fuel. Other resource commitments would be neither irreversible nor irretrievable.



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**ACRONYMS AND ABBREVIATIONS**

AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AGL	above ground level
AMSL	above mean sea level
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
dB	decibels
dBA	A-weighted sound level
DNL	day-night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EO	executive orders
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
MDNR	Maryland Department of Natural Resources
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O <sub>3</sub>	ozone
Pb	lead
PM <sub>10</sub>	particulates less than 10 micrometers in diameter
RDECOM	Research, Development and Engineering Command
ROI	Region of Influence
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
USC	U.S. Code
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compounds

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

### **1.1 Introduction**

The U.S. Army Research, Development, and Engineering Command (RDECOM) proposes to construct in 2005 a 824-foot tower on the Brandywine Communication Receiver Site (Brandywine Site) in Prince George's County, Maryland. The site is owned and operated by the 789<sup>th</sup> Communications Squadron, Andrews Air Force Base (AFB), Maryland. This Environmental Assessment (EA) has been prepared to assess the potential impacts associated with the proposed action as required under the provisions of the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] §4321. The Air Force Form 813 requesting this EA is presented in Appendix A.

The Brandywine Site is 1,635 acres located six miles south of Andrews AFB, east of U.S. Route 5, and north of the town of Mattawoman (Figure 1-1). Andrews AFB serves as the aerial gateway to the nation's capital for the political, diplomatic, and military leaders of the United States. The Brandywine Site contains an antenna field that serves as a communications relay site supporting Andrews AFB and other users (Figure 1-2).

### **1.2 Need for the Action**

The advent of the global war on terrorism and ongoing homeland security mission analyses have highlighted a need to refine the communications infrastructure in the National Capital Region, the geographic area containing military installations in the Washington, D.C. region. The proposed action is needed to identify a location on the Brandywine Site for construction of a communications tower necessary to support national security objectives.

### **1.3 Scope of EA**

This EA identifies and analyzes potential effects on the natural and human environment in sufficient detail to determine the significance of impacts on the affected environment. Resources evaluated include Air Quality; Noise; Wastes, Hazardous Materials, and Stored Fuels; Water Resources; Biological Resources; Socioeconomic Resources; Cultural Resources; Land Use;

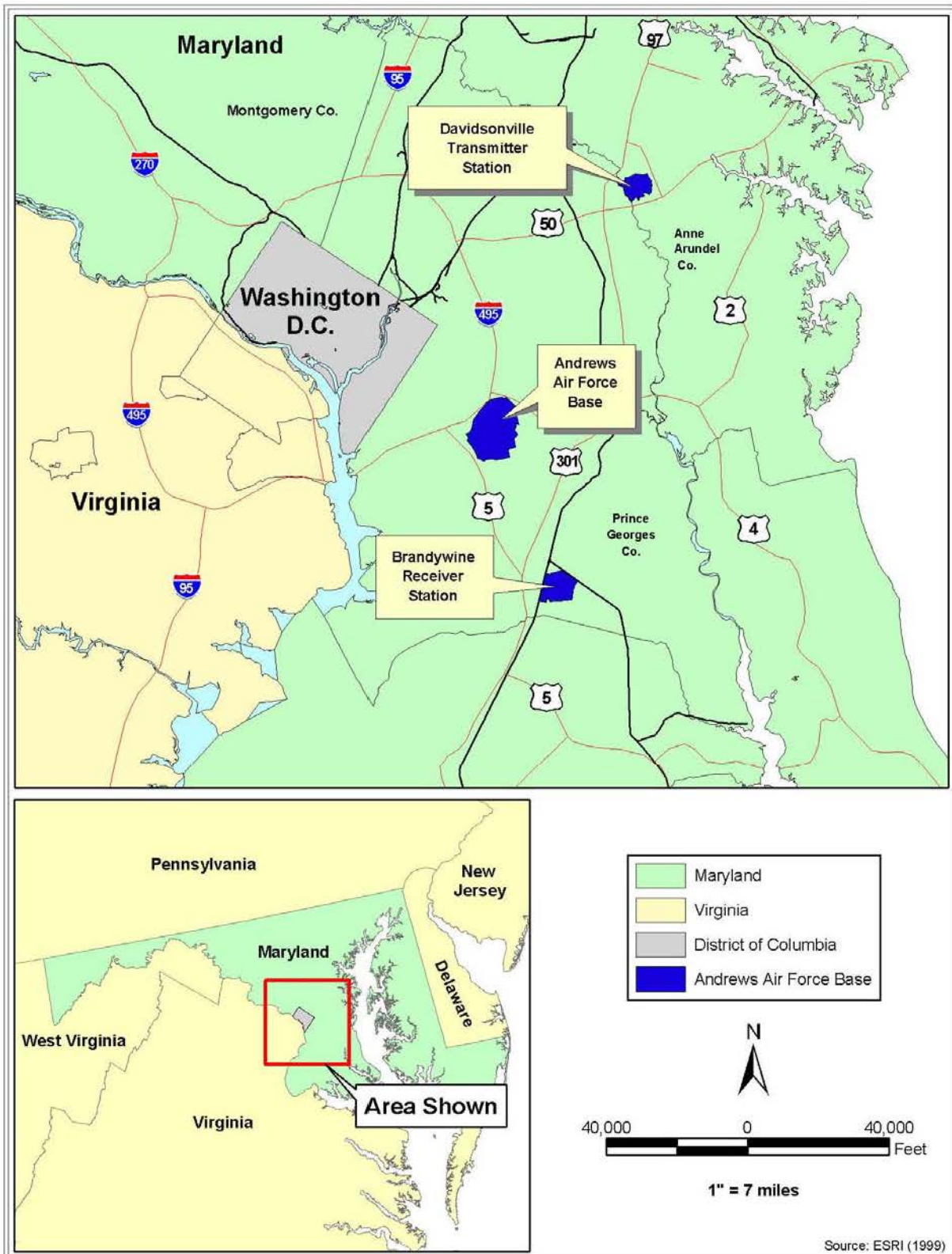


Figure 1-1. General Location Map of Andrews AFB.



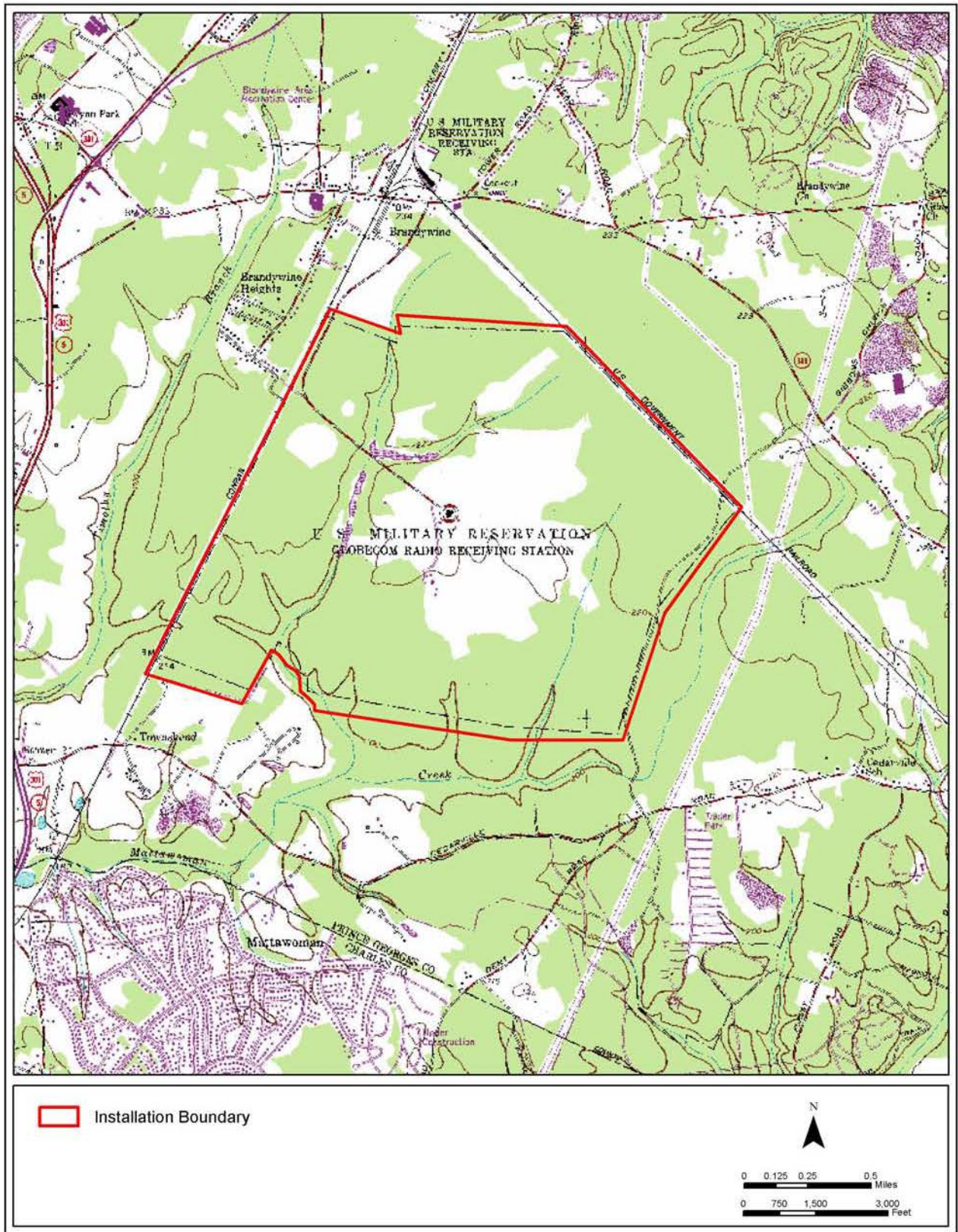


Figure 1-2. Installation Location Map of Brandywine Site.



Transportation Systems; Airspace/Airfield Operations; Safety and Occupational Health; Environmental Management; and Environmental Justice. The potential environmental effects would be those associated with construction and operation of the tower and associated facilities.

#### **1.4 Decision to be Made**

The Base Civil Engineer and Chairman of the Environmental Protection Committee at Andrews AFB will be responsible for deciding whether to implement the proposed action, to modify it or to take no action. The decision will be based on the findings contained in this EA and after considering public comments and agency recommendations.

#### **1.5 Applicable Regulatory Compliance and Required Coordination**

A variety of laws, regulations, and executive orders (EOs) apply to federal actions and form the basis of the analysis in this EA. The Council on Environmental Quality (CEQ) and NEPA set forth a process for federal agencies to consider potential environmental consequences of their proposed actions and enhance the environment through well-informed federal decisions. This EA is prepared in accordance with NEPA; CEQ regulations (40 Code of Federal Regulations [CFR] §§1500-1508); and Air Force *Environmental Impact Analysis Process* (AF EIAP), (32 CFR 989). The resources evaluated are relevant to the proposed action and the document avoids presenting information on resources not anticipated to be affected.

Other related federal regulations include, but are not limited to, Federal Aviation Administration (FAA), 14 CFR Part 77; EO 11514, Protection and Enhancement of Environmental Quality; and Endangered Species Act of 1973 (16 USC §§1531-1544). In addition, Andrews AFB will provide a 30-day public review and comment period before finalizing the decision on the proposed action.

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

### **2.1 Introduction**

This section describes the alternatives that are analyzed for the action. It also presents the no action alternative and identifies other alternatives the Air Force considered but did not analyze in detail because they were not reasonable.

### **2.2 Selection Criteria for Alternatives**

To be considered a viable alternative, the location for the communications tower must: (1) be on land owned and controlled by the Department of Defense (DoD) for force protection and security requirements; (2) be on a site afforded vehicular access without necessity of construction of access roads; (3) be in an open area that prevents shadowing of signals and allows for requisite stand-off areas in the event of a tower collapse as well as for guy wires to support the tower; (4) lie outside of an established or proposed flight corridor thereby allowing for construction at an optimal height in excess of 800 feet above ground level; (5) be located in the National Capital Region, and (6) be supported by a military installation communications squadron or group.

The U.S. Army RDECOM and Andrews AFB Environmental Flight considered reasonable alternatives to the proposed actions and the no action alternative to arrive at alternatives to be analyzed in this EA (Figure 2-1). Reasonable alternatives were identified as meeting the underlying purpose and need for the proposed actions that were not highly speculative alternatives.

### **2.3 Alternatives Considered but Eliminated from Detailed Study**

The U.S. Army RDECOM considered 18 other federal facilities and ranked the Brandywine Site highest according to the alternative selection criteria to locate the proposed tower. The alternative locations that were not considered viable according to the alternative selection criteria included Warrenton, VA; Olney, MD; Davidsonville, MD; Quantico, VA (2 sites); Mt Weather, VA; Cheltenham, MD; Ft Belvoir, VA (3 sites); Ft Meade, MD; White Oak, MD; Langley, VA; Vint Hill, VA; Bethesda, MD; Ft Washington, MD; Andrews AFB, MD; and Carderock, MD.



**Figure 2-1. Alternatives analyzed in this EA.**



Locating the proposed tower in an area that would not constitute an obstacle to air navigation and would be consistent with FAA regulations was a major consideration in selecting the alternatives. In addition, alternative locations to the Brandywine Site were eliminated from further consideration based on security and technical requirements specified by the U.S. Army RDECOM.

## 2.4 Description of Proposed Alternatives

In addition to the proposed tower location, two alternative locations on the Brandywine Site have been identified as meeting the purpose and need and are carried forward for analysis. Additionally, as required under 32 CFR §989.8(d), the no action alternative is carried forward for analysis in order to provide a baseline examination of the existing conditions.

### 2.4.1 Proposed Action—Southeast Tower Placement

The U.S. Army RDECOM, in consultation with the 789<sup>th</sup> Communications Squadron, proposes to build and operate a communications facility in the southeast portion of the Brandywine Site. Specifically, the proposed site lies approximately 2,000 feet southeast of the main compound on the Brandywine Site. This center cluster of buildings is commonly referred to as the central building facility. The proposed action is composed of the following components.



*Existing Antenna Field*

#### 2.4.1.1 Construct Tower

The proposed tower would be constructed in a typical configuration using prefabricated building materials. Three sets of guy wires would be placed 120 degrees apart and radiate outward up to 1,000 feet from the tower's center. Four additional sets of wires would be offset from the plane of the primary guy wire sets. The guy wire sets can be rotated around the tower as needed to minimize ground disturbance and effort needed to anchor the guy wires. Each anchor point would occupy less than 100 square feet and would be enclosed in fencing to provide security.

The secondary guy wire sets would be placed in the radius of the primary guy wire sets. The tower would be anchored to a foundation consisting of 10 to 15 cubic yards of concrete.

#### **2.4.1.2 Improve Access Road**

The proposed tower would be sited approximately 2,000 feet from the existing central building facility. An existing gravel and stone access road runs from the central



*Representative Guy Wire Anchor*

building facility to within 300 feet of the proposed tower. A thin layer of crusher run stone would be added to improve the access road for the transport of heavy equipment during construction of the tower. In addition to upgrading the access road, it would be extended the remaining 300 feet through an existing field to the proposed tower.

#### **2.4.1.3 Install Portable Storage Buildings**

Up to five small (400 square feet each) prefabricated storage buildings would be placed at the site to house office administration and communications maintenance and testing equipment. Each building would be placed on a gravel pad. After approximately three years of testing, three of the small buildings would be removed and two small buildings would remain onsite for storage of electrical equipment and supplies.

#### **2.4.1.4 Connect Utilities**

Water, sewage, communications, and electrical utilities required for operation of the communications facility would be extended from existing lines located at the central building facility. Utilities would be buried 2 feet deep and run approximately 2,000 feet alongside the access road from the central building facility to the project site. A stand-by natural gas or diesel fueled generator would provide backup power in the event of an electrical outage.



*Access Road from Central Building Facility*

### 2.4.1.5 Environmental Controls

As part of the proposed construction contract award, the successful bidder would be required to prepare and submit environmental controls. These plans and documents would be submitted to the contracting officer at Andrews AFB. Among these controls would be:

- Preparation of an environmental protection plan;
- Pre-construction site survey and report of site conditions;
- Use of material safety data sheets; and
- Acquisition of required permits including a solid waste disposal permit, a stormwater discharge permit, and a sediment and erosion control permit.

Prior to construction activities, coordination with the natural and cultural resources manager at Andrews AFB would be required. Implementation of environmental controls would comply with Maryland Department of Environment and Maryland Department of Natural Resources (MDNR) regulations governing the protection of environmental resources. In addition, best management practices (BMPs) would be implemented for wetlands, rare plants, migratory birds, and environmental protection.

Although disturbance of cultural resources is not expected as a result of implementing the proposed action, procedures for stopping work in the event that cultural resources might be impacted would be included in the required environmental controls. If archaeological (historic and/or prehistoric) resources are encountered during ground disturbing activities, the Andrews AFB natural and cultural resources manager and the State Historic Preservation Office (SHPO) would be notified to ensure compliance with 36 CFR Part 800. All construction work would then be suspended until a qualified archeologist determined the significance of the encountered resource(s). Due to the height of the tower, consultation with the SHPO has been conducted in order to determine any effects from tower construction to the setting of any nearby historic properties.

### 2.4.2 Alternative 1—Southwest Tower Location

The U.S. Army RDECOM is considering constructing the proposed tower on a site that lies approximately 1,500 feet southwest of the central building facility. The design of the communications tower and associated facilities would be identical to that of the proposed action. Identical improvements to the existing access road would be required to support the construction

equipment. However, an extension of approximately 900 feet rather than the 300 feet necessary for the proposed action would be required to implement this alternative. In lieu of a 2,000-foot extension of buried utilities from the central building facility, a 1,500 foot extension would be required. Implementation of environmental controls associated with the letting of the construction contracts would be the same as described for the proposed action.

### **2.4.3 Alternative 2—Northeast Tower Location**

In addition to the proposed action location and the southwest tower location alternative, a third location on the Brandywine Site is being considered. This site lies approximately 2,500 feet northeast of the central building facility. The design of the tower and associated facilities would be identical to that of the proposed action. As with the other two action alternatives, improvements to the access road would be required and an extension of approximately 250 feet to the road would be required. A 2,500-foot extension of buried utilities would also occur as part of the implementation of this action. Implementation of environmental controls associated with the letting of the construction contracts would be the same as described for the proposed action.

### **2.4.4 No Action Alternative**

Under the no action alternative, no tower construction would occur on the Brandywine Site. While not meeting the purpose and need for the action outlined in Section 1.0, analyzing this alternative provides a benchmark against which the magnitude of the environmental effects arising from the proposed action and alternatives can be compared.

## **2.5 Description of Past and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts**

The Air Force proposes future actions to remove and replace towers in the antenna field at the Brandywine Site. The towers range in height from approximately 40 feet to 120 feet. Three towers and associated communications equipment will be installed as part of the upgrade at the Brandywine Site to replace aging equipment. In addition, 11 towers that will not be needed after the upgrade would be removed including the concrete foundations and associated guy wires. All disturbed areas will be restored using the appropriate backfill, seeding and straw mulching.

These actions are included in the cumulative impacts section to the extent that details regarding such actions exist and the actions have the potential to interact with the proposed action.

Separate NEPA documentation either has been prepared or will be prepared for the past, present, and reasonably foreseeable actions.

## **2.6 Identification of Preferred Alternative**

The proposed action is the preferred alternative. The potential impacts to relevant resources were considered on a site-specific basis for comparison of alternatives. The comparison of potential impacts is based on the information and analyses presented in Section 3.0 and Section 4.0. Table 2-1 summarizes the potential impacts of the environmental consequences of implementing the proposed action or by taking no action. The potential short-term and long-term impacts from the tower construction were considered.



**Table 2-1. Comparison of Alternatives.**

<b>Resource/ Issue</b>	<b>Proposed Action</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>No Action</b>
Air Quality	Potential short-term negative effect from combustion emissions and fugitive dust due to construction activities; emissions would be below <i>de minimis</i> levels; no long-term effect	Same as proposed action	Same as proposed action	No effect
Noise	Potential short-term and negligible effect from construction activities.	Same as proposed action	Same as proposed action	No effect
Wastes, Hazardous Materials, and Stored Fuels	Potential short-term and negligible effect from construction activities.	Same as proposed action	Same as proposed action	No effect
Water Resources	No impact to wetlands, minor and short-term impacts to groundwater and surface water resources	Same as proposed action	Same as proposed action	No effect
Biological Resources	Potential short-term and minor effect to vegetation; impacts to migratory birds would be minimized by following USFWS guidance on tower siting; minimal tree clearance required; minimal wildlife habitat, state listed species occur in the project site but impacts will be avoided by coordinating with the MDNR; no long-term effect	Potential short-term and minor effect to vegetation; impacts to migratory birds would be minimized by following USFWS guidance on tower siting; some tree clearance required; minimal wildlife habitat, state listed species occur in the project site but impacts will be avoided by coordinating with the MDNR; minimal long-term effect from tree clearing	Same as Alternative 1	No effect

**Table 2-1. Comparison of Alternatives (cont'd).**

<b>Resource/ Issue</b>	<b>Proposed Action</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>No Action</b>
Socioeconomic Resources	No effect	No effect	No effect	No effect
Cultural Resources	No effect	No effect	No Effect	No Effect
Land Use	No effect	No effect	No effect	No effect
Transportation Systems	No effect	No effect	No effect	No effect
Airspace/Airfield Operations	No obstacle to air navigation	Same as proposed action	Same as proposed action	No effect
Safety and Occupational Health	Potential short-term negative effect from risk to worker safety and health during construction activities	Same as proposed action	Same as proposed action	No effect
Environmental Management	Potential short-term negative effect from excavation and grading activities for anchoring guy wires and access road improvements; no effect from tower operations; soil erosion control methods and best management practices would reduce potential for impacts; no long-term effect	Same as proposed action	Same as proposed action	No effect
Environmental Justice	No effect	No effect	No effect	No effect

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### **3.0 AFFECTED ENVIRONMENT**

#### **3.1 Introduction**

This section describes the relevant environmental conditions at the Brandywine Site for resources potentially affected by implementation of the proposed action, action alternatives, and the no action alternative. In compliance with guidelines contained in NEPA, CEQ regulations, and the Air Force Environmental Impact Analysis Process, (32 CFR 989), the description of the affected environment focuses on those resources potentially subject to impacts.

#### **3.2 Air Quality**

The National Ambient Air Quality Standards (NAAQS) developed by the Environmental Protection Agency (EPA) sets a national limit on the concentrations of criteria pollutants in the atmosphere of a particular area. The pollutants of highest concern to the EPA are carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 10 micrometers in diameter (PM<sub>10</sub>), ozone (O<sub>3</sub>), and lead (Pb). The status of an area is determined by how criteria pollutant concentrations in the atmosphere compare to the NAAQS. If these concentrations exceed the NAAQS an area is considered in non-attainment, and if they do not, the area is considered in attainment.

The Clean Air Act (CAA) of 1990 requires states to achieve and maintain the NAAQS within their borders. Each state may adopt requirements stricter than those of the national standard. Each state is required by the EPA to develop a State Implementation Plan (SIP) that contains strategies to achieve and maintain the national standard of air quality in the state. The Region of Influence (ROI) is the proposed construction sites at the Brandywine Site.

The Brandywine Site is in Maryland's Air Quality Control Region 4, which includes the Washington Metropolitan Area. This area has NAAQS attainment status for all criteria pollutants except ozone. The serious nonattainment status for ozone in Region 4 is mainly attributed to nitrogen oxides (NO<sub>x</sub>) from automobile emissions in the Washington Metropolitan Area on warm days with low wind velocities.

Federal agencies are required to determine the general conformity (General Conformity Rule) of proposed actions with respect to the SIP for attainment of air quality goals. Maryland has

submitted a SIP to maintain and attain compliance with the NAAQS. The *de minimis* exemption levels for conformity determinations in serious nonattainment areas for O<sub>3</sub> is 50 tons per year for volatile organic compounds (VOC) and 100 tons per year for NO<sub>x</sub> as provided by 40 CFR 153(b)(1).

### **3.3 Noise**

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to sound varies according to the type and characteristics of the sound sources, distance between source and receptor, receptor sensitivity, and time of day (USEPA 1974). Sound is measured with instruments that record instantaneous sound levels in decibels (dB). A-weighted sound level (dBA) measurements are used to characterize sound as it is heard by the human ear. Noise can also be presented as a day-night average sound level (DNL), which is a cumulative metric that accounts for the total sound energy occurring over a 24-hour period. Sound levels of nighttime noise events, those occurring between 10:00 p.m. and 7:00 a.m., are penalized in this metric by adding 10 dB to account for the lower ambient sound level and greater community sensitivity to noise during nighttime hours. Noise levels in excess of 65 DNL are normally unacceptable for noise-sensitive land uses such as residences, schools, and hospitals (USAF 1998). The ROI for noise is the immediate vicinity of the proposed tower construction site on the Brandywine Site.

The Brandywine Site is a remote facility and does not contain stationary noise sources. There are no sensitive noise receptors such as a hospital, residential area, or school within 2,500 feet of the proposed tower location.

### **3.4 Wastes, Hazardous Materials, and Stored Fuels**

Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, or any materials that pose a potential hazard to human health and safety or the environment due to their quantity, concentration, or physical and chemical properties. Hazardous waste includes any waste which, due to its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to an increase in mortality, serious irreversible illness, or incapacitating reversible illness; or pose a substantial threat to human health or the environment. The Brandywine Site does not maintain a permitted hazardous waste

storage facility. The ROI for wastes, hazardous materials, and stored fuels is the Brandywine Site.

Hazardous materials and waste are managed in accordance with the following laws: Federal Water Pollution Control Act; Clean Water Act; Solid Waste Disposal Act; Resource Conservation and Recovery Act; Comprehensive Environmental Response Compensation and Liability Act; CAA; and Federal Insecticide, Fungicide, and Rodenticide Act. The Maryland Solid Waste Management regulations provide for coordinated state solid waste management and a resource recovery plan (COMAR, Title 26, Subtitle 04). The Maryland Hazardous Waste Regulations (COMAR, Title 26, Subtitle 13) set forth the requirements for hazardous waste generators, transporters, owners, or operators of hazardous waste treatment, storage, or disposal facilities.

The Andrews AFB Hazardous Materials Planning and Response Plan (Andrews AFB 2002a) covers the Brandywine Site and describes specific protocols for preventing and responding to releases, accidents, and spills involving hazardous materials. The Andrews AFB Hazardous Waste Management Plan (Andrews AFB 2002b) provides guidance for facilitating compliance with all federal, state, and local regulations pertaining to hazardous waste. The Spill Prevention, Control, and Countermeasures Plan for Andrews AFB (Andrews AFB 2002c) provides procedures for spill reporting, containment, cleanup, and disposal of hazardous waste. Fuel is stored in three above ground level (AGL) storage tanks (one 2,000 gallon, one 400 gallon and one 100 gallon) at the central building facility (Sommerville 2004).

### **3.5 Water Resources**

Water resources include the watershed, floodplain, surface water, and wetlands on the Brandywine Site. Actions such as construction projects that affect the vegetative cover or soil can also potentially affect the quality and quantity of runoff. Water quality may also be affected by the release of associated fuel, oil, grease, and coolant used in vehicles. Vegetated floodplains and wetlands provide important water quality improvement functions. Maintenance of water quality, wildlife habitat, and other functions are recognized in EO 11988, EO 11990, and in DoD and Air Force policies that mandate maximum avoidance of these features at all Air Force installations. The ROI for analysis of water resources is the Brandywine Site.

### **3.5.1 Watershed, Floodplain, and Surface Water**

Watersheds are defined by topography that drains to a particular point on the landscape, usually a water body, wetland, or point along a stream or ditch. The Brandywine Site is in the Lower Potomac watershed and runoff from the site flows via several small streams to the Mattawoman Creek (Andrews AFB 2001).

Floodplains are defined as areas adjoining inland or coastal waters that are prone to flooding. These areas serve to contain the 100-year flood precipitation thereby preventing or reducing the flooding on neighboring lands. The Mattawoman Creek and other small tributaries flow into the floodplain at the Brandywine Site (Figure 3-1).

Surface waters consist of four beaver ponds in the northern portion of the Brandywine Site. The size of these ponds fluctuates according to the level of beaver activity and rainfall.

### **3.5.2 Wetlands**

The Brandywine Site contains 19 wetlands (Figure 3-2) encompassing approximately 382 acres (Andrews AFB 1993). Wetlands exist in the vicinity of the proposed action and alternative tower locations, but not in the projected construction areas. These systems can have a profound effect on the hydrologic flow regime of streams and the residence time of water within the basin. Regionally, wetlands are most highly concentrated in heavily forested areas and along stream banks and corridors. Forested wetlands concentrated along streams and drainage ways, open water emergent wetlands, and scrub-shrub wetlands constitute the majority of wetlands observed at the Brandywine Site.

## **3.6 Biological Resources**

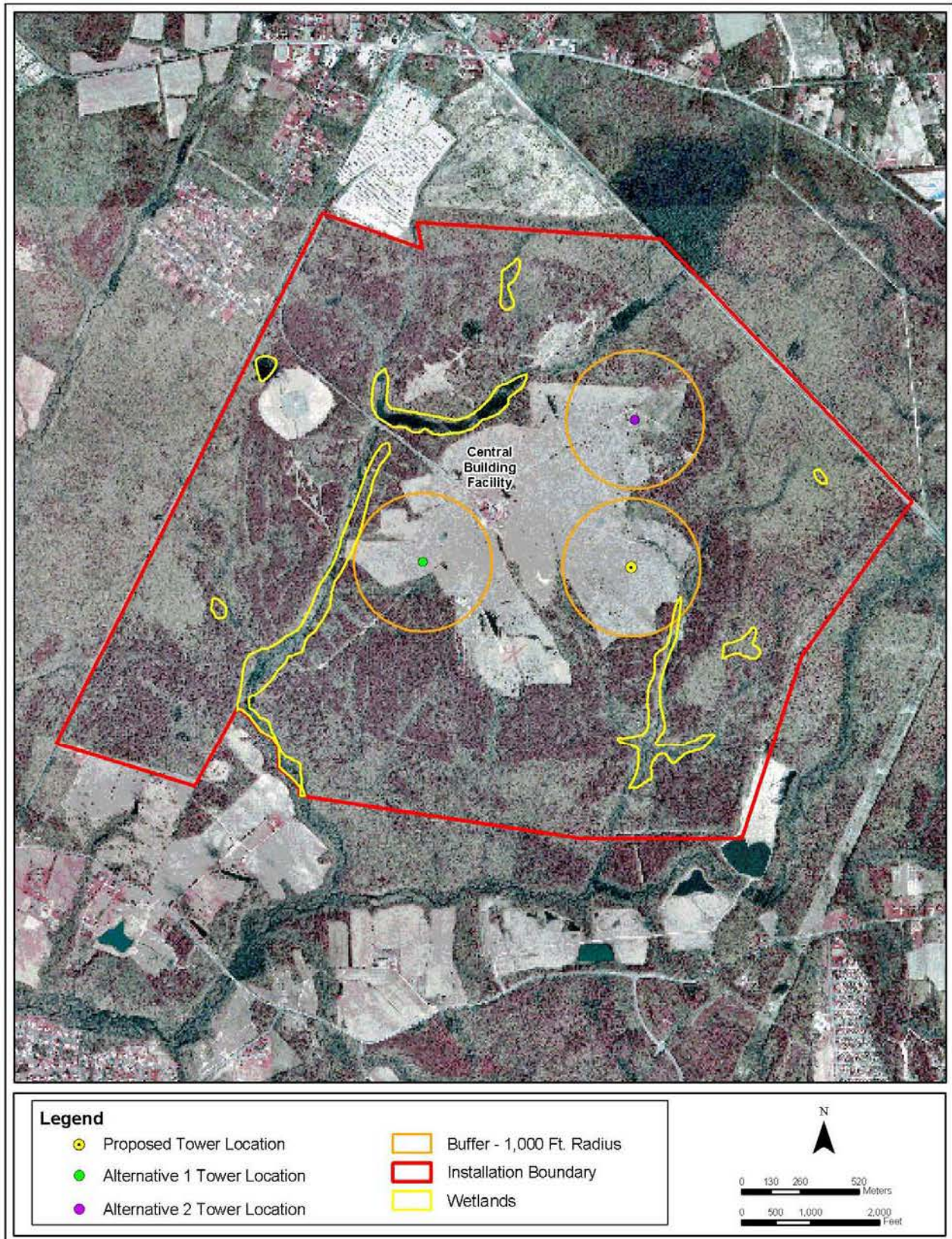
Biological resources include living, native, or naturalized plant and animal species and the habitats in which they occur. For the purposes of this analysis, terrestrial biological resources are divided into the categories of vegetative communities; wildlife, including mammals and bird species; and threatened, endangered, or state listed species of concern (Andrews AFB 2001). The ROI includes the area surrounding the vertical height and width of the tower and guy wires, as well as the utility lines and access road.





Figure 3-1. Floodplain Map for Brandywine Site.





**Figure 3-2. Wetlands and Watersheds on Brandywine Site.**

### 3.6.1 Vegetation

The vegetation of the proposed tower location and alternative sites includes the ecological communities of old field successional, mixed hardwood pine forest, red maple (*Acer rubrum*) swamp, mixed hardwood forest, oak-hickory forest, and Virginia pine (*Pinus virginiana*) forest. The majority of the proposed tower location and alternative sites would be positioned in the mowed field of grasses and herbs. Fescue (*Festuca* spp.) is predominant in the existing antenna field at the Brandywine Site.

### 3.6.2 Wildlife

Mammals typical of the area include eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginianus*), striped skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), eastern cottontail (*Sylvilagus floridanus*), and white-tailed deer (*Odocoileus virginianus*). Small mammals include least shrew (*Cryptotis parva*), white-footed mouse (*Peromyscus leucopus*), and meadow vole (*Microtus pennsylvanicus*). The reptiles and amphibians includes eastern box turtle (*Terrapene carolina*), five-lined skink (*Eumeces fasciatus*), black racer (*Coluber constrictor*), and redback salamander (*Plethodon cinereus*).

Breeding birds include Carolina wren (*Thryothorus ludovicianus*), tufted titmouse (*Baeolophus bicolor*), American crow (*Corvus brachyrhynchos*), song sparrow (*Melospiza melodia*), red-tailed hawk (*Buteo jamaicensis*), and eastern screech-owl (*Otus asio*). Winter residents include black-capped chickadee (*Poecile atricapilla*), northern cardinal (*Cardinalis cardinalis*), and eastern mockingbird (*Mimus polyglottos*). The Brandywine Site is in the Atlantic Flyway, which is an important migratory route for numerous bird species.

### 3.6.3 Rare, Threatened and Endangered Species

Inventories of rare species at the Brandywine Site were performed in 1994 (Davis 1994) and 1998 (Parsons 1998). The studies did not find federal or state listed animal species as threatened or endangered.

The federally threatened bald eagle (*Haliaeetus leucocephalus*) nests in the vicinity of the Brandywine Site. One nest (PG-02-02) is approximately 0.25 miles from the northeast boundary (Appendix A). This nest location is approximately 1.4 miles from the proposed southeast tower placement.

The southeastern shrew (*Sorex longirostris*), designated as a rare species in need of conservation in Maryland, was located at the Brandywine Site. The host plant for a state listed endangered species of butterfly, frosted elfin (*Incisalia irus*), was observed at the site, although neither the butterfly nor the immature stages were seen. Table 3-1 presents state-listed plant species known to occur on the Brandywine Site according to the MDNR.

**Table 3-1. State-listed Plants on or in the vicinity of the Brandywine Site.**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Agalinis skinneriana</i>	Skinner's foxglove	Endangered
<i>Carex buxbaumii</i> *	Buxbaum's sedge	Endangered
<i>Carex bullata</i>	Button sedge	Threatened
<i>Hypericum gymnanthum</i>	Clasping-leaved St. John's-Wort	Endangered
<i>Linum intercursum</i>	Sandplain flax	Endangered
<i>Polygala polygama</i> *	Racemed milkwort	Threatened
<i>Torreychloa pallida</i> *	Pale mannagrass	Endangered

\* potential occurrence

### 3.7 Socioeconomic Resources

Socioeconomic analyses include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or area of interest. The socioeconomic resources could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of the proposed action. The ROI for the proposed action is Prince George's County.

The U.S. Census Bureau (USCB) defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within the household. Individuals falling below the poverty threshold (\$18,810 for a household of four in 2003) are considered low-income individuals (USCB 2004). Census tracts, where at least 20 percent of the residents are considered poor, are known as poverty areas. When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an extreme poverty area (USCB 1995).



The population growth rate in the ROI between 1990 and 2000 was 1.0 percent as compared to 1.3 percent in Washington D.C. and Maryland during the same period. The labor force growth rate in the ROI between 1990 and 2000 was 4.1 percent as compared to 6.2 percent in Washington D.C. and 7.1 percent in Maryland during the same period. The unemployment rate (3.5 percent) was similar in the three areas. The incidence of persons below poverty (9.3 percent) and children below poverty (15.1 percent) in the ROI and Maryland were similar, but approximately half that of Washington D.C. (U.S. Bureau of Labor and Statistics [USBLS] 2004).

### **3.8 Cultural Resources**

Cultural resources consist of prehistoric and historic sites, shipwrecks, buildings, engineering structures, districts, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archaeological resources (prehistoric and historic), historic resources, and traditional cultural properties. Archaeological resources are locations and objects from past human activities. Historic resources include buildings, structures, and designed landscapes that are usually over 50 years of age and meet criteria to be considered for inclusion in the National Register of Historic Places (National Register). Traditional cultural properties hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture.

The regulations and procedures in 36 CFR 800, which implements Section 106 of the National Historic Preservation Act (NHPA), requires federal agencies to consider the effects on properties listed in or eligible for inclusion in the National Register. Prior to approval of the proposed action, Section 106 requires that the Advisory Council on Historic Preservation or the appropriate SHPO be afforded the opportunity to comment. The Maryland SHPO is the Maryland Historical Trust in the Maryland Department of Housing and Community Development. The ROI for the analysis of cultural resources is the Brandywine Site.

#### **3.8.1 Archaeological Resources**

Prehistoric occupation in the Mid-Atlantic region, including Prince George's County, Maryland, is divided into three major periods that reflect technological and social adaptation and

development. These periods are the Paleo-Indian, Archaic, and Woodland. The Archaic and Woodland periods are further divided into Early, Middle, and Late subperiods. Hundreds of prehistoric archaeological sites have been recorded in the Chesapeake Bay region, including five Woodland Period sites at Davidsonville Transmitter Station and two sites with undated prehistoric components at Andrews AFB (Parsons 1996, Tetra Tech 1999).

Based on one survey by Parsons Engineering Science in 1996, no archaeological sites have been recorded in the area of potential effect at the Brandywine Site. Field survey methodology employed both pedestrian reconnaissance and shovel testing. One isolated projectile point was recovered during shovel testing, however, no site number was assigned and no further work was recommended. The map resulting from the survey depicts six potential historic sites; however, the features of these sites are not defined (Figure 3-3). The report recommended that no further work be conducted on the installation due to disturbance (Parsons 1996).

### **3.8.2 Historic Resources**

At the end of the 17th Century, Prince George's County was established from portions of both Charles and Calvert counties. Despite the introduction of the railroad and the establishment of area mills, plantation agriculture remained dominant through the Industrial Revolution until the eve of the Civil War. After the Civil War, this area of Prince George's County saw the development of small villages associated with proximity to the Baltimore and Potomac Railroad, typically at railroad/existing road crossings. Most recently Prince George's County has become suburbanized with housing developments, shopping centers, and an infrastructure of highways and roads (Virta 1984).

There is no National Register listed or eligible resources within the Brandywine Site; however, the height of the proposed tower makes it visible from a distance from all directions. Therefore an assessment of its potential impact on National Register Listed and Eligible resources within its viewshed was undertaken. To establish the viewshed parameters, RDECOM conducted a balloon float test on December 2, 2004. A tethered balloon was placed at the approximate location and height of the proposed tower, and its visibility from main public roads roughly circling the site was recorded. As a result of this a viewshed of a 1.5 mile radius from the site's Central Building Facility was determined (Figure 3-3). Within this viewshed are 2 National Register Listed

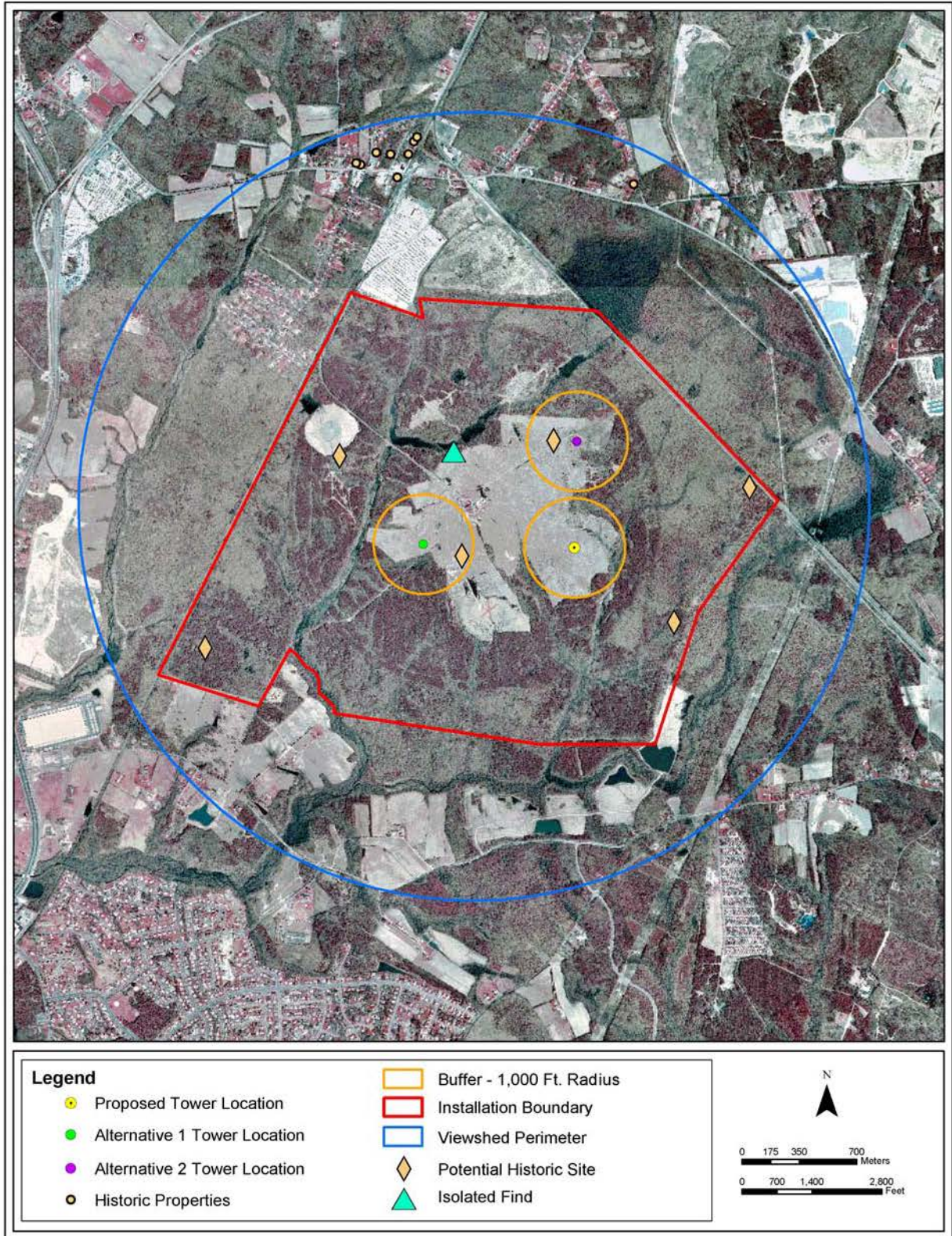


Figure 3-3. Potential Historic Sites on Brandywine Site.

properties, 5 properties previously determined National Register Eligible by the Maryland SHPO, and 7 properties previously determined not National Register Eligible by the Maryland SHPO. At the direction of the Maryland SHPO, additional eligibilities were made only for those properties within the viewshed that had been recorded on the Maryland Inventory of Historic Properties but not previously evaluated for National Register Eligibility. Four properties meeting this criteria were evaluated: two properties were determined National Register Eligible; one property was determined not eligible for listing due to a loss of material integrity; one property previously recorded on the Maryland Inventory of Historic Properties has been demolished and a new, non-historic residential structure has been constructed on its site. In accordance with the Maryland Historical Trust's *General Guidelines for Compliance-Generated Determinations of Eligibility*, Determination of Eligibility forms have been completed and submitted to that office for their review and filing.

### **3.8.3 Traditional Cultural Properties**

Traditional cultural properties and sacred sites are resources that may contain no visible evidence of human use or modification. Examples include sites associated with Native American religious beliefs; communities whose buildings and landscapes reflect cultural traditions valued by long-term residents; or traditional resource areas (e.g., medicinal plants, gathering of eagle feathers) that a particular group has used for generations. Such resources may also be eligible for inclusion in the National Register. Based upon the literature reviewed, no traditional cultural properties have been identified at in the project area.

### **3.9 Land Use**

Land use generally refers to human occupation and modification of land, often for residential or commercial purposes. It may also refer to the acquisition and public ownership of land for preservation or protection of natural resources such as wildlife habitat, vegetation or unique features. Analysis of existing and anticipated land use patterns is fundamental to municipal and installation planning efforts. Base planners utilize land use plans to guide infrastructure development (utilities) and delivery of municipal services (police, fire, schools, libraries, parks) in an efficient manner while protecting significant environmental, historic or cultural features. In the context of an EA, land use analysis is important as a means to determine if there is sufficient area for proposed activities and to identify any potential conflicts with local land use plans.



The ROI for this action consists of the Brandywine Site and its immediate vicinity in Prince George's County, Maryland. Off-station land use resources include land immediately abutting the station and owned by private sector land holders, publicly regulated utilities and railroads, and, municipal, state and federal governments.

The principal land use at Brandywine is as a DoD installation; specifically an antenna farm serving users in the DoD community and others. The antenna farm is situated near the center of site and is buffered by the presence of woodlands. The central building facility lies more than one-half mile from any privately held real estate. The station lies within Prince George's County, Maryland, and that jurisdiction has adopted a general plan that recognizes the use as a government installation (Prince George's County 2002). To the north of the station is industrially zoned land occupied by an auto junkyard; lands to the east, south and west are wooded open space and large-lot residential parcels. To the northwest, across from the railroad track right-of-way on the western boundary of the station is a residential subdivision (Prince George's County 2004).

### **3.10 Transportation**

Transportation refers to the movement of persons and goods from one destination to another. Transportation systems are classified into primary modes: air; rail; roadway; and waterway. Airport capacity and access to surface waterways are not significantly affected by actions occurring at the Brandywine Site because there is no direct interface to those modes from the station. The ROI for the proposed action consists of the Brandywine Site and its immediate vicinity in Prince George's County, Maryland. Off-station transportation resources consist of those systems immediately adjacent to the tracking stations and would include the surface roadways and railroads.

There are two active railroad lines that intersect north of the station in the town of Brandywine. One runs from Brandywine along the west side of the installation southward to the Potomac River near US 301. The other runs along the northeastern boundary of the installation southeasterly toward Lexington Park.

Prince George's County has a well-developed transportation infrastructure. The state of Maryland owns and maintains state roads and the county owns and maintains all other public



roads. Access to the Brandywine Site is provided by a two-lane at-grade secondary road (Air Force Road) that ties into Maryland Route 381 north of the station. The nearest thoroughfare is Maryland Route 5. The nearest public-use airport, Washington Executive (Hyde) municipal, is approximately 6 miles northwest of the project site. Andrews AFB is 7 miles north of the site.

### **3.11 Airspace /Airfield Operations**

For this EA, the environmental issue of airspace, as it relates to airspace classifications and designation pertaining to air traffic control and training airspace management, was eliminated from detailed study. No changes to the use and management of airspace would be associated with the proposed action or its alternatives. The construction activities proposed would not alter or interfere with existing air traffic control procedures or flight patterns.

Andrews AFB employs a rigorous site selection process prior to the approval of any new construction on the base or its sub-installations, including the Brandywine Site. Part of that process examines whether the construction activities would adversely affect navigable airspace by creating an obstruction as defined in 14 CFR 77. This provision of the Federal Aviation Regulations requires notice prior to the construction of objects exceeding a height of 199 feet AGL.

The purpose of the notice provision is to allow the FAA to analyze the effect the proposed construction would have on existing visual and instrument approach procedures to nearby airports, to allow the proponent to become acquainted with the obstruction marking provisions in the regulation, and to allow the obstruction to be noted on aviation charts in a timely manner. An obstacle would be deemed an obstruction if it exceeded a certain height that varies with the distance from an airport. The greater the distance from an airport, the greater the height permitted before an object is deemed an obstruction. The obstruction evaluation study is reproduced at Appendix A.

### **3.12 Safety and Occupational Health**

Health and safety issues relevant to the proposed action and alternatives include construction jobsite safety and worker occupational health and safety. Operation of the communications

facilities does not pose a safety risk to workers. The ROI for worker health and safety are the tower construction site and the associated access through the Brandywine Site.

Construction site safety and prevention of mishaps is an ongoing activity for any Air Force job site. As a part of the contracts let for construction services, standard terms and conditions include safety at the forefront. Areas of concern include compliance with confined space regulations; minimum personal protection equipment standards to include footwear, hardhats, and eye protection; heavy equipment operations; and limited access to the area. Construction activities would be conducted in accordance with applicable Air Force safety regulations and standards prescribed by the Air Force Occupational Safety and Health (AFOSH) requirements in AFI 91-301 (U.S. Air Force 1996).

### **3.13 Environmental Management**

The environmental management resources for this EA include pollution prevention and geology and soils. The Maryland Sediment and Erosion Control Act provides regulatory oversight for these resources. The ROI for the analysis of environmental management resources is the Brandywine Site.

The Andrews AFB Pollution Prevention (P2) Plan (Andrews AFB 2002d) establishes the P2 Plan and sets forth the installation objectives for reducing air, land, surface water, and groundwater pollution on the Brandywine Site.

Unconsolidated sedimentary geologic units ranging in age from Quaternary to Cretaceous underlie the Coastal Plain in southern Maryland. These units are typically composed of unconsolidated sand, gravel, silt, clay, marl, glauconite, and organic materials overlying crystalline Precambrian and early Paleozoic bedrock. Most of the Brandywine Site is level to gently sloping, and slopes to the southwest. Surface elevations range from about 195 feet to 225 feet above mean sea level (AMSL) (Kirby et al. 1967).

The Brandywine Site is in the Beltsville-Leonardtwn-Chillum association. These soils are predominantly gently to moderately sloping, but may include areas that are nearly level to fairly steep. The association consists mainly of moderately deep, well-drained to poorly drained soils with a compacted subsoil or substratum. The association is composed of about 45 percent

Beltsville soils, 13 percent Leonardtown soils, and 42 percent Chillum and minor soils (Kirby et al. 1967).

The soils throughout the Brandywine Site have been disturbed for cropland development prior to Air Force ownership. The majority of the Brandywine Site is located on the poorly drained Leonardtown and Elkton silt loams. Moderately well-drained Beltsville silt loam and well-drained Croom, Sassafra, Chillum, and Iuka soils occur at various locations. These soils have been used largely for general farming and residential and industrial development in other portions of Prince George's County (Kirby et al. 1967).

### **3.14 Environmental Justice**

EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 1994) specifies that federal agencies shall make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of their programs, policies, and activities on minority populations and low income populations. A minority population can be described as being composed of American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic. In addition, minority populations are exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ 1997). The ROI for the proposed action is Prince George's County.

When the USCB tract is compared to a larger and more regional geographic unit, such as Prince George's County, the District of Columbia, or the state of Maryland, the census tract in which the project area sits (Census Tract No. 8010.01) generally contains a lower percentage of minority and persons living below the poverty threshold. Table 3-2 provides a comparison of selected demographic characteristics for the project area census data and that of regional jurisdictions. The project area census tract would not be considered an area of concentrated minority or low-income populations.

**Table 3-2. 2000 Demographic Profile.**

	<b>Census Tract No. 8010.01<sup>1</sup></b>	<b>Prince George's County</b>	<b>District of Columbia</b>	<b>Maryland</b>
<i>Race</i>				
White, alone	55.3%	27.0%	30.8%	64.0%
Black or African- American, alone	39.9%	62.7%	60.0%	27.9%
Asian	1.1%	3.9%	2.7%	4.0%
Native American	1.0%	0.3%	0.3%	0.3%
Other	0.8%	3.5%	3.8%	1.8%
Total Identifying as one race	98.1%	97.4%	97.6%	98.0%
<i>Income<sup>2</sup></i>				
Per Capita Income	\$22,431	\$23,360	\$28,659	\$25,614
Percent of Population Below Poverty Line (all ages)	4.9%	7.7%	20.2%	8.5%

<sup>1</sup> Census Tract No. 8010.01 includes all of the Brandywine Receiver Station Site.

<sup>2</sup> 1999 Data

Source: USCB 2000

### 3.15 Indirect and Cumulative Impacts

The CEQ defines indirect and cumulative effects as the impact on the environment that results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions (40 CFR §1508.7). The ROI for this analysis is the Brandywine Site and the surrounding property.

A critical principle of cumulative effects analysis states that the analysis should be conducted within the context of resource, ecosystem, and human community thresholds – levels of stress beyond which the desired future condition degrades (CEQ 1997). The magnitude and extent of impacts on a resource depends on whether the cumulative effects exceed the capacity (resilience or resistance to stress and the ability to recover) of the resource to sustain itself and remain productive. Similarly, the natural ecosystem and human community have maximum levels of cumulative effects that they can withstand before the desired conditions of ecological functioning

and human quality of life deteriorates. The function of the cumulative impacts analysis is to ensure that the consequences of actions do not exceed these thresholds.

### **3.16 Unavoidable Adverse Impacts**

This EA identifies any unavoidable adverse impacts that would result based on implementation of the proposed action or alternatives, and the significance of the potential impacts to resources and issues. CEQ (40 CFR §1508.27) specifies that a determination of significance requires consideration of context and intensity. The ROI for determining unavoidable adverse impacts is the Brandywine Site.

Short-term impacts to resources such as vegetation and soils would result from the proposed activities. The severity of potential impacts would be limited by regulatory compliance and implementation of environmental controls specified as part of the proposed action.

### **3.17 Relationship Between Short-Term Uses and Enhancement of Long-Term Productivity**

The relationship between short-term uses and enhancement of long-term productivity from implementation of the proposed action is evaluated from the standpoint of short-term effects and long-term effects. The ROI for determining the relationship between short-term uses and enhancement of long-term productivity is the Brandywine Site.

Short-term effects would be those associated with the tower construction and associated communication facilities. The long-term enhancement of productivity would be those effects associated with operation of the new communications facility, after implementation of the proposed action.

### **3.18 Irreversible and Irretrievable Commitment of Resources**

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the proposed action if implemented. The ROI for determining irreversible and irretrievable commitment of resources is the Brandywine Site.

An irreversible effect results from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g., endangered species) that cannot be restored as a result of the proposed action.

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## 4.0 ENVIRONMENTAL CONSEQUENCES

### 4.1 Introduction

This section presents the potential environmental impacts of implementing either the proposed action, alternatives, or no action alternative. The potential impacts to the human and natural environment were evaluated relative to the existing environment described in Section 3.0. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short-term and long-term project effects.

### 4.2 Air Quality

Impacts to air quality would occur if pollutant emissions associated with the implementation of the proposed action caused or contributed to a violation of any federal, state, or local ambient air quality standard; exposed sensitive receptors to substantially increased pollutant concentrations; or exceeded the *de minimis* value for those criteria air pollutants for which the region held a nonattainment status.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would temporarily increase levels of some criteria air pollutants in the immediate area from construction of the tower and associated communications facilities. This construction project would occur in two phases: site grading and building. Ordinary activities for these phases include site preparation, earthmoving, general land clearing, cut and fill operations, trenching, soil compaction, grading, and adding improvements such as structures and facilities. Emissions generated from these activities include combustion emissions (VOC, NO<sub>x</sub>, CO, SO<sub>2</sub>) and fugitive dust (PM<sub>10</sub>) from mobile heavy-duty diesel- and gasoline-powered equipment and soil disturbance.

The construction area would consist of the seven anchor points, base tower, access road, utilities lines, and five portable buildings. To determine the applicability of the General Conformity Rule to the proposed action, potential emissions were estimated for the ozone precursor pollutants, NO<sub>x</sub> and VOC. The following assumptions and methodology were used to estimate potential emissions for the project:

- Construction equipment would include bulldozers, dump trucks, backhoe/loaders, water trucks, and flatbed trucks;



- Project duration would be 30 days, 8 hours per day, with up to 2 pieces for each type of construction equipment; and
- Air pollutant factors are taken from U.S. Environmental Protection Agency (USEPA 1996). Compilation of Air Pollutant Factors, Mobile Sources (AP 42). 4th Edition, U.S. Environmental Protection Agency, Ann Arbor, Michigan.

Total estimated emissions for VOC and NO<sub>x</sub> would be 0.17 tons and 2.48 tons, respectively (Table 4-1). The *de minimis values* would not be exceeded; therefore, impacts to air quality would not be significant and the General Conformity Rule does not apply to the proposed action. The increased emissions from construction activities would be temporary and not expected to affect the local air quality.

**Table 4-1. Estimated Project Emissions.**

<b>Equipment</b>	<b>Days</b>	<b>Hours/Day</b>	<b>Pieces</b>	<b>VOC emission factor</b>	<b>NO<sub>x</sub> emission factor</b>
<b>Bulldozer</b>	30	8	2	0.20	2.14
Emissions (lbs)				96.0	1027.2
<b>Dump Trucks</b>	30	8	2	0.19	4.17
Emissions (lbs)				91.2	2001.6
<b>Backhoe/loader</b>	30	8	2	0.23	1.69
Emissions (lbs)				110.4	811.2
<b>Water Truck</b>	30	1	1	0.19	4.17
Emissions (lbs)				5.7	125.1
<b>Flatbed Truck</b>	30	8	1	0.19	4.17
Emissions (lbs)				45.6	1000.8
Total Emissions (lbs)				348.9	4965.9
<b>Total Emissions (tons)</b>				<b>0.17</b>	<b>2.48</b>

**Alternative 1—Southwest Tower Placement.** The southeast tower placement would have the same potential impacts as described for the proposed action. The increased emissions from construction activities would be temporary and not expected to affect the local air quality.

**Alternative 2—Northeast Tower Placement.** The northeast tower placement would have the same potential impacts as described for the proposed action. The increased emissions from construction activities would be temporary and not expected to affect the local air quality.

**No Action Alternative.** Under the no action alternative, the proposed construction and road improvements would not occur. The ambient air quality would remain unchanged.

### 4.3 Noise

A noise impact would occur if an activity changed the human exposure to noise levels of 65 DNL or higher. Noise associated with the proposed project would be temporary and site specific.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not permanently alter the noise environment at the Brandywine Site. The ambient noise environment would return to previous conditions after the tower construction. Heavy machinery would be the major source of noise during the 3-month construction period; however, construction activities would occur during daylight hours when occasional loud noises are more tolerable. No sensitive receptors would be exposed to construction noise; therefore, no disruption of normal activities would be expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

Noise sources associated with the proposed tower construction include dump trucks, graders, backhoes, bulldozers, and other heavy trucks. The sound level at a composite point source comprised of these types of equipment would be approximately 76 dBA at the construction site. The distance that sound travels to a receptor is the greatest factor in sound attenuation. Using the standard noise reduction per doubling of distance, a source of 76 dBA would attenuate to a background level of 50 dBA in less than 100 feet and consequently result in less than 65 DNL exposure beyond the proposed tower construction site (Harris 1998).

**Alternative 1—Southwest Tower Placement.** The potential noise impacts for the southwest tower placement would be the same as impacts for the proposed action. There would not be a permanent change in the noise environment at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential noise impacts for the northeast tower placement would be the same as impacts for the proposed action. There would not be a permanent change in the noise environment at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to the noise environment at the Brandywine Site under the no action alternative.

#### **4.4 Wastes, Hazardous Materials, and Stored Fuels**

Impacts associated with wastes, hazardous materials, and stored fuels would be based on the toxicity of the substance, the transportation and storage risk, and the method of waste disposal. Adverse impacts would occur if the storage, use, transportation, or disposal of these substances increases human health risks or environmental exposure. Based on research into the Affected Environment (Section 3) the proposed action and alternatives would not impact any contaminated sites.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not increase human health risks or environmental exposure to wastes, hazardous materials, and stored fuels. Use of prefabricated building materials for the proposed tower construction would minimize the onsite generation of wastes. Operation of the communications facilities would not require use and storage of hazardous materials. The emergency backup generator would require the storage of diesel fuel or propane, depending on the type of generator used. All activities relative to wastes, hazardous materials, and stored fuels would be conducted in accordance with the Hazardous Materials Planning and Response Plan; Hazardous Waste Management Plan; and Spill Prevention, Control, and Countermeasures Plan for Andrews AFB.

**Alternative 1—Southwest Tower Placement.** The potential impacts for the southwest tower placement would be the same as the impacts for the proposed action. There would be no increase for human health risks or environmental exposure to wastes, hazardous materials, and stored fuels at the Brandywine Site.

**Alternative 2—Northeast Tower Placement.** The potential impacts for the southwest tower placement would be the same as the impacts for the proposed action. There would be no increase for human health risks or environmental exposure to wastes, hazardous materials, and stored fuels at the Brandywine Site.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to the existing conditions for wastes, hazardous materials, and stored fuels at the Brandywine Site under the no action alternative.

#### 4.5 Water Resources

Impacts to water resources would occur if implementation of the proposed action resulted in changes to water quality or supply; threatened or damaged hydrology of floodplains, surface waters, and wetlands; endangered public health by creating or worsening health hazards; or violated established laws or regulations.

**Proposed Action—Southeast Tower Placement.** Impacts of flood hazards from the proposed tower construction would occur if such actions are proposed in areas with high probabilities of flooding. Implementation of the proposed action or alternatives would result in a negligible increase in impermeable surface and surface water runoff.

Under the proposed action, improvements to the existing road; clearing and grading of the land; and construction of the proposed tower, portable storage units and other utilities would not result in long-term negative impacts to water resources at the Brandywine Site. The proposed construction would not occur within a 100-year floodplain zone and would not affect the floodplain on the Brandywine Site. However, the proposed construction activities could result in a temporary increase in runoff and sedimentation to nearby wetlands (Andrews AFB 1993), as well as a tributary that lies within the 1,000 foot perimeter of the proposed site. This tributary eventually flows into Mattawoman Creek. To avoid or minimize potential impacts, BMPs, as described in the Andrews AFB Stormwater Pollution Prevention Plan (Andrews AFB 2002e), would be implemented. Placement of guy wires would be adjusted to avoid construction and disturbance to nearby wetlands and small tributaries. To ensure that impacts to wetlands in the vicinity of the project area would be avoided, onsite delineation would be conducted by the Andrews AFB natural resources manager prior to the action.

**Alternative 1—Southwest Tower Placement.** Under Alternative 1, tower construction and development of associated utilities would not result in long-term negative impacts to water resources at the Brandywine Site. However, the 1,000 foot perimeter at this site encompasses part of the 100-year floodplain at Brandywine, as well as being adjacent to jurisdictional wetlands and the Mattawoman Creek. To avoid floodplain impacts, no construction would take place within the floodplain. To avoid potential impacts, BMPs, as described in the Andrews AFB Stormwater Pollution Prevention Plan (Andrews AFB 2002e), would be implemented, as well as conducting a delineation of wetlands in the vicinity of the project area.

**Alternative 2—Northeast Tower Placement.** Under Alternative 2, tower construction and associated utilities would not result in long-term negative impacts to water resources at the Brandywine Site. This location is not near the 100-year floodplain and the 1,000 foot guy wire radius would not encompass wetlands or tributaries. To ensure that impacts to wetlands in the vicinity of the project area would be avoided, an onsite delineation by the Andrews AFB natural resources manager would be conducted prior to the action.

**No Action Alternative.** Under the no action alternative the proposed activities at the Brandywine Site would not occur and baseline water resources would remain unchanged.

#### **4.6 Biological Resources**

Adverse impacts to biological resources would occur if species or habitats of concern are adversely affected over relatively large areas or disturbances and impacts could cause reductions in population size or distribution of a species of concern. This section analyzes the potential for impacts to biological resources, such as habitat loss, from implementation of the proposed action or alternatives.

**Proposed Action—Southeast Tower Placement.** The proposed action would result in disturbance to biological resources in the footprint of the communication tower, guy wire anchors, access road extension, portable storage buildings, and utility line. However, since the proposed tower location is a mowed area, the expected impacts would be minor. The MDNR has a record for a state endangered plant species in the project site and advised that prior to construction Andrews AFB should coordinate with the Wildlife Heritage Section to minimize impacts to listed species. No impact to threatened or endangered species would be expected because of the flexibility in locating the tower. The total area of ground disturbance would be approximately one acre. The disturbance to vegetation and wildlife would be minor. In accordance with the environmental controls specified for the action, placement of the guy wire anchors outside of sensitive habitats such as the adjacent wetlands would decrease impacts to wildlife. However, the proposed tower could impact migratory birds due to the height and the associated guy wires.

Communication towers pose a threat to birds. Weather conditions, tower height, use of guy wires, and lighting can all be contributing factors to bird collisions with communication towers.

Migratory songbirds are especially vulnerable to collision because they usually migrate at night. The U.S. Fish and Wildlife Service (USFWS) issued a list of tower siting guidelines designed to minimize bird collisions. The guidelines are based on the best available science and technology to aid in protection of migratory birds (Appendix A). The guidelines include locating towers near or in the same field as other towers, using the minimum amount of warning and obstruction lighting required by the FAA, and attaching visual markers to guy wires to increase visibility. As part of the environmental controls specified for the proposed action, the USFWS guidelines would be followed to minimize the potential impact on birds. These guidelines would reduce the accidental bird collision with the proposed communication tower and its associated guy wires (Manville 2000).

**Alternative 1—Southwest Tower Placement.** The potential impacts to biological resources for the southwest tower placement would be the same as the impacts for the proposed action. However, there are no known state listed plant species in the project site according to the MDNR. This disturbance to vegetation and wildlife would be minor and insignificant with the exception of consideration for avian species. Implementation of Alternative 1 would follow the USFWS guidelines to minimize the potential impact on migratory birds (Manville 2000).

**Alternative 2—Northeast Tower Placement.** The potential impacts to biological resources for the northeast tower placement would be the same as impacts for the proposed action. However, the MDNR has two records for state endangered and threatened plant species in the project site and advised that prior to construction Andrews AFB should coordinate with the Wildlife Heritage Section to minimize impacts to listed species. This disturbance to vegetation and wildlife would be minor and insignificant with the exception of consideration for avian species. Implementation of Alternative 2 would follow the USFWS guidelines to minimize the potential impact on avian wildlife (Manville 2000).

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to the biological resources at the Brandywine Site under the no action alternative.

#### 4.7 Socioeconomic Resources

The socioeconomic conditions in Prince George's County could be affected by changes in the rate of population growth, changes in the demographic characteristics of the ROI, or changes in employment in the ROI caused by the implementation of the action. Implementation of the proposed action or alternative would not require relocation of personnel, provide long-term employment, or increase personal income in the ROI.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would have no impact on socioeconomic resources, as it will have no affect on demographics and it will not adversely impact any minorities or low-income populations. The total cost for the communications facilities would be \$1.5 million.

**Alternative 1—Southwest Tower Placement.** The potential impacts for the southwest tower placement would be the same as the impacts for the proposed action. There would be no affect on demographics and no adverse impact to minorities or low-income populations under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts for the northeast tower placement would be the same as the impacts for the proposed action. There would be no affect on demographics and no adverse impact to minorities or low-income populations under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no impact to socioeconomic resources under the no action alternative.

#### 4.8 Cultural Resources

Archeological resources would be adversely impacted if buried archeological deposits were disturbed. Earth-moving activities could impact the integrity of an archeological site or unmarked burials. Historic resources would be adversely impacted if an existing historic building, district, or landscape lost one or all of those qualities that make it eligible for listing on the National Register of Historic Places. Impacts can include changes or losses to a resource's physical material or form or changes or losses to a resource's historic setting or encroachments into its viewshed if those views are significant to its historic character.

#### 4.8.1 Archaeological Resources

**Proposed Action—Southeast Tower Placement.** Construction of the tower, associated guy wires and concrete foundations, installation of utilities, and associated facilities southeast of the central building facility would not result in impacts to known archaeological or architectural resources. No sites have been identified in this area based on a previous survey. However, six “Potential Historic Sites” have been depicted on a map in the vicinity (Parsons 1996). Potential Historic Site 2 is in the vicinity of the southeast tower location. In accordance with the environmental controls specified for the action, the Andrews AFB natural and cultural resources manager and the SHPO would be notified if archeological (historic or prehistoric) are encountered during ground disturbing activities.

**Alternative 1—Southwest Tower Placement.** Implementation of the southwest tower placement at the Brandywine Site would not result in impacts to known archaeological resources. Portions of this area have been previously surveyed resulting in the identification of no archaeological sites. Untested portions of the area were identified as severely disturbed by previous construction (Parsons 1996). Environmental controls would be implemented to protect cultural resources.

**Alternative 2—Northeast Tower Placement.** Implementation of the northeast tower placement at the Brandywine Site would not result in impacts to known archaeological resources. Portions of this area have been previously surveyed resulting in the identification of no archaeological sites. Untested portions of the area were noted as severely disturbed by previous construction (Parsons 1996). Environmental controls would be implemented to protect cultural resources.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to cultural resources at the Brandywine Site under the no action alternative.

#### 4.8.2 Historic Resources

**Proposed Action—Southeast Tower Placement.** Construction of the tower, associated guy wires and concrete foundations, installation of utilities, and associated facilities southeast of the central building facility would not result in impacts to historic resources. Within the selected viewshed are 2 National Register Listed properties and 7 National Register Eligible Properties. An assessment of the tower’s potential visibility from these resources was undertaken using the



determined 1.5 mile radius and the results of the December 2004 balloon test. The distance of the resources from the tower site and the topography and existing vegetation all aid in making the proposed tower either not visible or at most minimally visible from historic resources. The proposed tower in the Proposed Action will not have any impacts on historic resources either eligible for listing or listed on the National Register.

**Alternative 1—Southwest Tower Placement.** Implementation of the southwest tower placement at the Brandywine Site would not result in impacts to historic resources. Within the selected viewshed are 2 National Register Listed properties and 7 National Register Eligible Properties. An assessment of the tower's potential visibility from these resources was undertaken using the determined 1.5 mile radius and the results of the December 2004 balloon test. The distance of the resources from the tower site and the topography and existing vegetation all aid in making the proposed tower either not visible or at most minimally visible from historic resources. The proposed tower in Alternative 1 will not have any impacts on historic resources either eligible for listing or listed on the National Register.

**Alternative 2—Northeast Tower Placement.** Implementation of the northeast tower placement at the Brandywine Site would not result in impacts to historic resources. Within the selected viewshed there are 2 National Register Listed properties and 7 National Register Eligible Properties. An assessment of the tower's potential visibility from these resources was undertaken using the determined 1.5 mile radius and the results of the December 2004 balloon test. The distance of the resources from the tower site and the topography and existing vegetation all aid in making the proposed tower either not visible or at most minimally visible from historic resources. The proposed tower in Alternative 2 will not have any impacts on historic resources either eligible for listing or listed on the National Register.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to historic resources at the Brandywine Site under the no action alternative.

#### **4.9 Land Use**

Potential land use impacts are based on the degree of sensitivity to land use changes affected by the proposed action. Land use impacts would be significant if the action: violated or was

otherwise inconsistent with adopted land use plans or policies; undermined the viability of a favored existing land use activity; created threats to public health, safety and welfare of the occupants of adjacent or nearby land users; or conflicted with the fundamental mission of an installation.

**Proposed Action—Southeast Tower Placement.** The proposed activities would not change the existing land use of the Brandywine Site. The site would remain a communications station. From the perspective of the Prince George’s County General Plan, the site would remain a government installation. No alteration to the extent of the real estate devoted to the use would occur as no transfer of land from DoD to a private sector entity is proposed. The construction and operation of the facility would not affect the viability of any existing land uses, nor would it create harm to public health, safety or the welfare of occupants of adjacent land users. The character of the adjacent uses is largely rural and not densely populated. Nor would the proposed action conflict with the fundamental mission of the installation.

The presence of a wooded buffer in excess of one-half mile in any direction and the presence of railroad rights-of-way along the northwestern and northeastern boundaries provide a visual buffer to operation of the facility. Given the lack of relief in the terrain and proximity of woodlands to the nearest public roads, it is unlikely that the tower would be visible from adjacent properties. From greater distances and higher terrain, it is possible that the tower would be visible. However, from those distances, the presence of the tower would not be the predominate feature of the landscape.

**Alternative 1—Southwest Tower Placement.** Under this alternative, the construction activities and operational characteristics would be identical; only the particular location on the Brandywine Site would differ. The effects to land use resources would be the same as those described for the proposed action. A wooded buffer to a similar extent would remain and the site elevation at this location is not substantially different.

**Alternative 2—Northeast Tower Placement.** Under this alternative, the construction activities and operational characteristics would be identical; only the particular location on the Brandywine Site would differ. The effects to land use resources would be the same as those described for the proposed action. A wooded buffer to a similar extent would remain and the site elevation at this location is not substantially different.

**No Action Alternative.** Selection of this alternative would have no effect on land use. None of the proposed activities would occur and the existing use of the Brandywine Site would remain unchanged.

#### **4.10 Transportation**

Impacts on transportation would be considered significant if an activity affected the safety or diminished the existing capacity of a transportation system.

**Proposed Action—Southeast Tower Placement.** Temporary, minor increase in usage along existing roads would arise from the construction activities; however, the road network has sufficient capacity to accommodate the short-term minor increase in construction traffic. No tie-in to the railroad system is proposed, therefore, no impact to that mode would occur.

The construction of the tower would not present an adverse effect to air navigation. Nor would the construction of a tower alter the airport capacity (passenger and cargo throughput or number of operations) to general aviation, military or commercial airports in the vicinity.

**Alternative 1—Southwest Tower Placement.** Implementation of this alternative would result in similar minor, temporary increased use of the road network for construction traffic as described above for the proposed action. The effects on air traffic and airports would be as described for the proposed action.

**Alternative 2—Northeast Tower Placement.** Implementation of this alternative would result in similar minor, temporary increased use of the road network for construction traffic as described for the proposed action. The effects on air traffic and airports would be as described for the proposed action.

**No Action Alternative.** Under this alternative, the proposed activities would not occur and existing operations at the Brandywine Site would continue as they are presently. There would be no effect to transportation systems if this alternative were selected.

#### **4.11 Airspace/Airfield Operations**

Airspace and airfield operations at Andrews AFB and other general aviation and commercial airports would be adversely affected if implementation of the proposed action or its alternatives

would: (1) create a need to change the airspace classification in the region; or (2) create an obstruction to air navigation that removes an instrument or visual approach to a public use airport.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not alter the existing airspace classifications in the vicinity of Andrews AFB and the Brandywine Site. No change to air traffic control procedures or to the existing availability of visual or instrument approaches would occur. The construction of the proposed communications tower at the proposed site would not present an obstruction to air navigation in accordance with the FAA *Determination of No Hazard to Air Navigation* (Appendix A).

**Alternative 1—Southwest Tower Placement.** The potential impacts to airspace/airfield operations for the southwest tower placement would be the same as impacts for the proposed action. Airspace and airfield operations would not be impacted under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts to airspace/airfield operations for the northeast tower placement would be the same as impacts for the proposed action. Airspace and airfield operations would not be impacted under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to the airspace and airfield operations under the no action alternative.

#### 4.12 Safety and Occupational Health

An impact would occur if the construction activities resulted in the likelihood that human health and safety would be endangered at the Brandywine Site. Changes that result in unacceptable or unnecessary health and safety risks would be considered significant.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not result in long-term negative impacts to worker health and safety criteria. Contract specifications for the proposed action would be implemented to protect worker health and safety through the requirement for a Health and Safety Plan. These specifications include preparation of a site-specific accident prevention plan and hazardous materials use plan. Therefore, implementation of the proposed action would not adversely impact safety and occupational health at the Brandywine Site.

**Alternative 1—Southwest Tower Placement.** The potential impacts to safety and occupational health for the southwest tower placement would be the same as impacts for the proposed action. Plans and specifications would be implemented to protect worker health and safety during construction. Therefore, tower construction would not adversely impact safety and occupational health at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts to safety and occupational health for the northeast tower placement would be the same as impacts for the proposed action. Plans and specifications would be implemented to protect worker health and safety during construction. Therefore, tower construction would not adversely impact safety and occupational health at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no change to safety and occupational health at the Brandywine Site under the no action alternative.

#### **4.13 Environmental Management**

Environmental management resources at the Brandywine Site would be impacted if the construction activities changed the P2 program, changed the geology in the area, or resulted in severe soil loss such that the area could no longer maintain the existing land use.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not result in long-term adverse impacts to the P2 program, geology, or soils. Excavation and grading activities would directly impact soils; however, use of BMPs would minimize the effects on soils. Approximately one acre of ground would be disturbed in completing the proposed construction activities. Construction debris would consist of the wastes generated during construction of the tower, access road improvement, installing portable buildings, and utilities connection. Construction debris would be managed in accordance with the Andrews AFB P2 Plan in order to avoid or minimize potential impacts.

All ground disturbances would occur over previously disturbed surfaces. Construction activities involving ground disturbances would include trenching, clearing, and grading. However the proposed activities would not accelerate the rate of erosion or degrade soil characteristics at the Brandywine Site. Stockpiled soils from excavation of the tower footing, guy wire anchors, and

utilities trenching would be protected from wind and water erosion by following an approved erosion and sediment control plan. An erosion and sediment control plan for installation of silt fences, straw bales, sediment traps, application of water sprays, seeding disturbed soils, and other regulatory measures would be implemented to avoid or minimize impacts to soils. The proposed access road improvements would benefit soil resources during construction activities by stabilizing the road surface and reducing the potential for soil erosion. No long-term impacts would be expected following grading and revegetation in the project area.

**Alternative 1—Southwest Tower Placement.** The potential impacts to environmental management resources for the southwest tower placement would be the same as impacts for the proposed action. As for the proposed action alternative, the total area of disturbance would be approximately one acre. No adverse or long-term changes would be expected at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts to environmental management resources for the northeast tower placement would be the same as impacts for the proposed action. As for the proposed action alternative, the total area of disturbance would be approximately one acre. No adverse or long-term changes would be expected at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no impacts to environmental management at the Brandywine Site under the no action alternative.

#### **4.14 Environmental Justice**

Environmental justice in Prince George's County would be impacted if implementation of the proposed action affected localized minority and/or low-income populations through impacts that would disproportionately affect the earning potential, distribution, or health of these sensitive populations. The degree of potential effects to populations of special concern is assessed by the percentage of individuals and/or populations affected.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action would not cause disproportionate impacts to localized minority and/or low-income populations.

According to the U.S. Census Bureau, the ROI would not be considered an area of concentrated minority population or an area of concentrated poverty.

**Alternative 1—Southwest Tower Placement.** The potential impacts for the southwest tower placement would be the same as impacts for the proposed action. There would be no disproportionate impacts to populations of concern under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts for the northeast tower placement would be the same as impacts for the proposed action. There would be no disproportionate impacts to populations of concern under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no impact to localized minority and/or low-income populations under the no action alternative.

#### **4.15 Indirect and Cumulative Impacts**

An indirect and cumulative impact would occur if the thresholds of ecological functioning and human quality of life were exceeded because of the proposed tower construction when added to past, present, and reasonably foreseeable future actions. The antenna field on the Brandywine Site contains numerous antennas of various configurations but none as high as the proposed tower. There are no Federal Communication Commission (FCC) registered towers in the town of Brandywine that exceed 250 feet high and one tower in the nearby town of Waldorf that is 807 feet high (FCC 2004a). The towers are approximately 6.5 miles apart. Therefore, no impact on the environment from the proposed tower construction when added to past, present, and reasonably foreseeable future actions would be expected to result in adverse indirect and cumulative impacts.

**Proposed Action—Southeast Tower Placement.** No resources were found to be adversely impacted from implementation of the proposed action. The proposed construction of another tower in the antenna field on the Brandywine Site is consistent with the FCC guidelines for siting towers to avoid indirect and cumulative impacts (FCC 2004b). The planned removal of 11 towers and replacement of three towers on the Brandywine Site is relevant to assessing cumulative impacts. The subsequent decrease in the number of towers on the site would lessen the potential for bird strikes based on a reduction in tower structures and supporting guy wires on

the Brandywine Site. However, the offsetting effects on potential bird strikes from the reduction in the number of towers and the addition of the proposed tower (3-4 times higher than the existing towers) are unknown. Since the proposed tower would be collocated in the antenna field, the incremental contribution of impacts of the proposed action, when considered in combination with other past, present, and reasonably foreseeable actions, would be negligible.

**Alternative 1—Southwest Tower Placement.** The potential for indirect and cumulative impacts for the southwest tower placement would be the same as impacts for the proposed action. Therefore, tower construction would result in negligible indirect and cumulative impacts at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential for indirect and cumulative impacts for the northeast tower placement would be the same as impacts for the proposed action. Therefore, tower construction would result in negligible indirect and cumulative impacts at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no indirect and cumulative impacts at the Brandywine Site under the no action alternative.

#### **4.16 Unavoidable Adverse Impacts**

An unavoidable adverse impact would be significant if the effects exceeded the regulatory compliance protections for the human and natural environment. Although the proposed tower construction would result in unavoidable impacts, determination of significance requires consideration of context and intensity.

**Proposed Action—Southeast Tower Placement.** The unavoidable adverse impacts from implementation of the proposed action would be short-term and minor. Potential impacts to air quality from fugitive dust emissions, biological resources from vegetation clearing, and soil and water resources from erosion and sedimentation would be unavoidable in order to accomplish the required construction activities. However, the environmental controls that would be implemented as part of the proposed action would minimize these potential impacts. No long-term adverse impacts would be expected.



**Alternative 1—Southwest Tower Placement.** The unavoidable adverse impacts for the southwest tower placement would be the same as impacts for the proposed action. Therefore, unavoidable adverse impacts would be negligible at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The unavoidable adverse impacts for the northeast tower placement would be the same as impacts for the proposed action. Therefore, unavoidable adverse impacts would be negligible at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no unavoidable adverse impacts at the Brandywine Site under the no action alternative.

#### **4.17 Relationship Between Short-Term Uses and Enhancement of Long-Term Productivity**

An adverse effect would occur if implementation of the proposed tower construction at the Brandywine Site resulted in a negative relationship between the short-term uses and enhancement of long-term productivity. The short-term effects would be expected to diminish quickly after tower construction. Operation of the new communications facility would be expected to result in a long-term enhancement of productivity for national security through improved communications abilities.

**Proposed Action—Southeast Tower Placement.** Implementation of the proposed action represents an enhancement of the communications capabilities at the Brandywine Site. The negative effects of tower construction would be minor compared to the positive benefits from the enhanced communications. Immediate and long-term benefits would be realized from improvements in the DoD communications infrastructure.

**Alternative 1—Southwest Tower Placement.** The southwest tower placement also represents an overall enhancement for communications capabilities at the Brandywine Site. Similar to the proposed action, implementation of Alternative 1 would result in immediate and long-term benefits for national security.

**Alternative 2—Northeast Tower Placement.** The northeast tower placement also represents an overall enhancement for communications capabilities at the Brandywine Site. Similar to the

proposed action, implementation of Alternative 2 would result in immediate and long-term benefits for national security.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no overall enhancement for communications capabilities at the Brandywine Site under the no action alternative.

#### **4.18 Irreversible and Irretrievable Commitment of Resources**

An adverse effect for irreversible and irretrievable resources would occur if implementation of the proposed tower construction at the Brandywine Site resulted in the use of irreplaceable resources or extinction of resources. Implementation of the proposed tower construction would require the use of resources to power equipment and site the communications facility.

**Proposed Action—Southeast Tower Placement.** Use of fill material and other construction materials and loss of vegetation for implementation of the proposed action would represent a negligible irreversible commitment of resources since the communications facility would be expected to remain useful for many years. Use of fuel for operation of construction and demolition equipment represents another irreversible commitment of resources in the proposed action. The amount of fuel used for activities during the short-term construction period would represent a negligible amount compared to the amount of fuel used daily for operation of Andrews AFB. Other resource commitments would be neither irreversible nor irretrievable.

**Alternative 1—Southwest Tower Placement.** The potential impacts to irreversible and irretrievable commitment of resources for the southwest tower placement would be the same as impacts for the proposed action. Therefore, tower construction would result in negligible irreversible and irretrievable commitment of resources at the Brandywine Site under this alternative.

**Alternative 2—Northeast Tower Placement.** The potential impacts to irreversible and irretrievable commitment of resources for the northeast tower placement would be the same as impacts for the proposed action. Therefore, tower construction would result in negligible irreversible and irretrievable commitment of resources at the Brandywine Site under this alternative.

**No Action Alternative.** The proposed communications facilities would not be constructed. Consequently, there would be no commitment of irreversible and irretrievable resources at the Brandywine Site under the no action alternative.

## 5.0 LIST OF PREPARERS

The following personnel from Geo-Marine, Inc. contributed to the preparation of this EA. Mr. Keith Harris, natural and cultural resources manager at Andrews AFB, provided the technical review.

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<b>Name</b>	<b>Experience</b>
Amy Gilboy	Environment Scientist – GIS analyst, 8 years experience in natural resources- biology, 3 years in GIS
Dana Banwart	Project Manager, 5 years experience in natural resources management
Elizabeth Pruitt	Program Manager, 8 years experience in natural resources management
Joseph Campo, Ph.D.	Senior Program Manager, 21 years experience in natural resources management
Kurt Hellauer	Project Manager, Senior Airspace/Land Use Analyst, 15 years experience
Paul Block	Project Manager, Environmental Scientist/Ecologist, 6 years experience
Stacy McClintock	Project Archaeologist, 5 years experience
Tim Sara	Senior Cultural Resources Manager, 20 years experience
Julian Adams	Senior Architectural Historian, 20 years experience

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**6.0 LIST OF AGENCIES AND PERSONS CONTACTED**

Linda C. Janey, J.D. Director, Maryland Department of Planning, State Clearinghouse for Intergovernmental Assistance.

Dan Murphy, USFWS, Chesapeake Bay Field Office, Annapolis, MD.

Maricela Constantino, USFWS, Chesapeake Bay Field Office, Annapolis, MD

Kevin J Sullivan, USDA, Wildlife Services, Annapolis, MD

Robert Beyer, Maryland DNR, Wildlife Division, Annapolis, MD

Lori Byrne, Maryland DNR, Wildlife and Heritage Service, Annapolis, MD

Glenn Therres, Maryland DNR, Wildlife and Heritage Division, Annapolis, MD

Keith Harris, Environmental Planner, Andrews AFB, 89 CES/CEVP, Andrews AFB, MD.

Leonard W. Fisher, Electronics Engineer, U.S. Army RDECOM, Redstone Arsenal, AL.

Greg L. Johnson, Mechanical Engineer, U.S. Army RDECOM, Redstone Arsenal, AL.

Elizabeth Cole, Administrator, Review and Compliance, Maryland Historical Trust, MD

Jonathan Sager, Preservation Officer, Maryland Historical Trust, MD

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## **Appendix A**

### **Regulatory Coordination and Correspondence**

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	Report Control Symbol RCS: 2003097
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INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

**SECTION I - PROPONENT INFORMATION**

1. TO (Environmental Planning Function) 89 CES/CEV 1419 Menoher, Andrews AFB, MD	2. FROM (Proponent organization and functional address symbol) USA RDECOM AMSRD-AMR-SG-AT, Redstone Arsenal, AL 35898	2a. TELEPHONE NO. (256)842-9004
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3. TITLE OF PROPOSED ACTION  
 Construct Tower on Brandywine Communications Receiver Site

4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date)  
 See Attached

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.)  
 See Attached

6. PROPONENT APPROVAL (Name and Grade) Leonard W. Fisher US Army RD&E Command	6a. SIGNATURE 	6b. DATE 20031114
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**SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.** (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

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

**SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION**

17.  PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # \_\_\_\_\_ ; OR  
 PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS  
 An environmental assessment is required for this project. Please provide contractual dollars(est. 20-35K) to ensure the NEPA requirements are met. Request EIAP documentation to include Environmental Baseline Survey necessary for Real Estate actions.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) JOSEPH.BROWN Jr. GS-12 Chief, Environmental Planning	19a. SIGNATURE 	19b. DATE 25 Nov 03
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**4. Purpose and Need for Action.**

The events of 9/11 and the ongoing efforts in support of the Global War on terrorism have resulted in a need to expand the existing infrastructure to support national security. The purpose of this action is to identify location(s) that can be used to construct tower(s) necessary to support national security objectives. In order to meet program schedule, it is estimated that an assessment needs to be completed by 30 January 2004.

**5. Description of Proposed Action and Alternatives**

**5.1 Proposed Action.** Construct up to a 1000' tower on the Brandywine Communication Receiver Site. Tower will be supported with guy wires at a radius of up to 1000' from the base of the tower. Several, up to three, small ConEx-type shelters for office administration and communication equipment will be necessary to test the system equipment. Depending on the final site location, a half mile section of an existing dirt road may need to be improved to handle the heavy equipment required to construct the tower and electrical/communication utilities may need to be installed along this same section of road. Long-term plans include the construction/use of a small un-manned facility and elimination of the ConEx shelters. Backup generator power will be provided through a diesel or liquid propane (LP) fuel generator.

**5.2 Selection Criteria.**

**5.2.1 Height and Footprint.** The tower needs to be placed to ensure equipment can operate. The requested height above ground level is 800', but is optimal at heights at or above 1000'; up to an 1000' radius footprint from the base of the tower is required for the guy wire anchors.

**5.2.2 Electronic Activity.** The proposed equipment needs to be located in an area with low electronic emissions.

**5.2.3 Location.** The tower needs to be located in proximity to the National Capital Region.

**5.2.4 Security.** The tower needs to be located on Government Property in order to meet project security requirements.

**5.3 Alternative Actions.** Several locations have been analyzed as alternatives. The same physical structure is being considered at: 1) Fort Meade; 2) Quantico USMC Base; 3) Fort Belvoir and other Federally owned sites.

**5.4 Environmental Impacts to be Considered.** Brandywine Communication Receiver site is currently used as a receiver location, Radio Controlled Model Airplane Club, and various hunting activities. The proposed site footprint would be on previously disturbed land. The proposed site would need to be looked at for threatened and endangered species, wetlands, and air emissions.

**Air Installation Compatible Use Zone/Land Use**

- There are no negative environmental effects associated with air installation compatible use zone/land use for this request.

AICUZ related activities (new mission, new aircraft, new flying patterns, etc) must be coordinated through the 89 CES Community Planner.

Buildings sited near the airfield must be coordinated through the 89 CES Community Planner to conform with height restrictions and clear zone requirements.

- Projects involving work outside the 5-foot line of an existing structure, or new buildings not previously sited must be approved and sited by the 89 CES Community Planner.

**Air Quality**

- Under regulations promulgated pursuant to the Clean Air Act, Title 42 United States Code (USC) Part 7506 (c), Andrews Air Force Base is located in a Severe nonattainment area for ozone within Prince George's County, Maryland. The de minimis level set for this area for emissions of ozone precursor pollutants (volatile organic compounds [VOCs] or oxides of nitrogen [NOx]), as indicated in Title 40 Code of Federal Regulations (CFR) Parts 51.853/93.153 (b)(1), is up to 50 tons per pollutant (VOCs or NOx) per year per action.

It has been determined that this action falls within the categories deemed by EPA to be "clearly de minimis." These categories of actions result in no emissions increase or an increase that is clearly de minimis.

Authority: 40 CFR Parts 51.853/93. 53 (c)(2) (X)

CEVQ Air Quality Program Manager. GR

**Water Resources**

- There are no negative environmental effects associated with water resources for this request.

There is the possibility of negative water resources impacts resulting from the increase of water flow in the area. To counter these possible effects, increased water conservation methods must be implemented.

**Safety and Occupational Health**

- There are no negative environmental effects associated with safety and occupational health or this request.

There is the possibility of positive socioeconomic impacts resulting from increased force protection upon completion of the project.

There is the possibility of a negative impact involving the potential disturbance, removal, or use of materials containing asbestos, lead or mercury-based paint, PCB's (mercury vapor/fluorescent light ballast, oil-cooled equipment, electrical transformers); or CFC-containing equipment (refrigeration units, HVAC systems).

- All OSHA requirements must be complied with to ensure general safety conditions will be attained.

**Hazardous Materials/Waste**

There are no negative environmental effects associated with hazardous materials/waste for this request.

- All hazardous waste disposal documents (manifests, waste analysis, etc) must be routed through the base Hazardous Waste Manager, Mr. Mark Warrell (89CEVQ) at 301-981-2239.

The proponent organization must adhere to federal, state, and local directives, and must report quantities of hazardous materials brought onto the installation. The installation must be informed of the duration of the material storage and the maximum quantity of each hazardous material that will be stored. All hazardous wastes generated by the proponent organization must be managed and disposed properly in accordance with the Andrews Air Force Base Wing Hazardous Waste Management Plan. All hazardous waste disposal documents (manifests, waste analysis, etc) must be routed through the base Hazardous Waste Manager, Mr. Mark Warrell (89CEVQ) at 301-981-2239. Government access to hazardous waste accumulation points and hazardous material storage areas shall not be restricted.

There is the possibility of a negative hazardous material/waste impact, based on the production of significant quantities of solid waste from construction and demolition activities. To offset these impacts, BMP's must be implemented including fugitive dust reduction, and all MDE solid waste regulations will be followed.

A review was conducted of the Asbestos and Lead-Based Paint survey database. There was no information in either database for this building. The contractor will need to take Asbestos and Lead-Based Paint samples in and around the building before they begin any demolition.

**Biological Resources**

There are no negative environmental effects associated with biological resources for this request.

Installation possesses wetlands and floodplains. Certain areas of the installation are occupied by threatened or endangered species. Any upgrade to portions of the base that is designated as a wetland, floodplain, or an area containing threatened or endangered species must comply with requirements of 32 CFR Part 989, Environmental Impact Analysis Process. These regulations require that prior to any action occurring in either a floodplain or a wetland the action is evaluated in an Environmental Assessment and made available for public comment for a minimum of 30 days.

**Cultural Resources**

There are no negative environmental effects associated with cultural resources for this request.

- Certain areas of the installation possess cultural resources. Any upgrade to portions of the base that is designated as an eligible cultural resources site must comply with requirements of AFI 32-7065, Cultural Resources Management, and 36 CFR Part 800, Protection of Historic and Cultural Properties. These instructions require that any projects occurring in either a cultural or historic properties evaluate and mitigate adverse effects on cultural resources.

**Geology and Soils**

- There are no negative environmental effects associated with geology and soils for this request.

89 CES/CEVP, x2-1653

Portions of the proposed action cross known IRP or AOC sites (\_\_\_\_\_).  
The proponent organization must review relevant Environmental Flight reports and develop a health and safety plan that addresses the potential contaminants that may be encountered. If contamination is encountered, the 89 CES/CEV must be notified immediately at 301-981-7121 to determine the appropriate disposition. The proponent organization must submit an AF Form 103 to obtain clearance for all excavations. All IRP sites and AOCs will be identified to the proponent organization.

CEVR \_\_\_\_\_

Project does not impact IRP Sites.

77

Grading or land disturbances exceeding 5000sq ft or 100 cubic yards of excavation requires a Maryland Department of Environment approved Sediment /Erosion Control and Storm Water Management Plan. Please contact Mr. Steve Richards at 301-981-1652 if you have any questions.

**Socioeconomic**

- There are no negative environmental effects associated with socioeconomic impacts for this request.
- There are potential socioeconomic impacts resulting in the increase or decrease of additional employees.
- There are potential impacts associated with projects that would generate significant local employment opportunities or revenues to local businesses.

**Other Environmental Issues**

- Digging – An AF 103 (Dig Permit) is required for your project. Please ensure CEV coordination is performed. Please attach SOW, maps and diagrams to your AF 103.
- There are potential negative impacts associated with the installation of new utility lines, or repair or upgrading, of existing utility lines (water, sewer, electrical, gas, communication, data processing cable, etc.).
- The project has the potential to generate significant public controversy, which could have negative impacts.

**Note: Any modifications to the proposed actions identified on page 1 lines 3-5, must be re-coordinated through 89 CES/CEVP prior to execution. Failure to accomplish this renders this document null and void. Please contact Lt Carson at 301-981-9631 if you have any questions.**

**JA**

The 89 AW/JA (Environmental) has reviewed the AF 813.

89 AW/JA (Environmental) \_\_\_\_\_



Federal Aviation Administration  
Eastern Regional Office  
1 Aviation Plaza-AEA-520  
Jamaica, NY 11434

Aeronautical Study No.  
2004-AEA-101-OE  
Prior Study No.  
2003-AEA-3682-OE

Issued Date: 3/25/2004

JOINT STAFF  
US ARMY RESEARCH DEVELOPMENT & ENGINEERING  
1931 JEFFERSON DAVIS HIGHWAY STE 511  
ARLINGTON, VA 22202

**\*\* DETERMINATION OF NO HAZARD TO AIR NAVIGATION \*\***

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure Type: Antenna Tower  
Location: BRANDYWINE, MD  
Latitude: 38-40-34.69 NAD 83  
Longitude: 76-50-9.23  
Heights: 824 feet above ground level (AGL)  
1049 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure should be marked and/or lighted in accordance with FAA Advisory Circular 70/7460-1 K Change 1, Obstruction Marking and Lighting, paint/red lights - Chapters 3 (Marked), 4, 5 (Red), & 12.

It is required that the enclosed FAA Form 7460-2, Notice of Actual Construction or Alteration, be completed and returned to this office any time the project is abandoned or:

At least 10 days prior to start of construction  
(7460-2, Part I)

Within 5 days after the construction reaches its greatest height  
(7460-2, Part II)

As a result of this structure being critical to flight safety, it is required that the FAA be kept apprised as to the status of the project. Failure to respond to periodic FAA inquiries could invalidate this determination.

See attachment for additional condition(s) or information.

This determination expires on 9/25/2005 unless:

- (a) extended, revised or terminated by the issuing office.
- (b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as



required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE POSTMARKED OR DELIVERED TO THIS OFFICE AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE.

This determination is subject to review if an interested party files a petition on or before 4/24/2004. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted in triplicate to the Manager, Airspace Branch, Federal Aviation Administration, Washington, D.C. 20591.

This determination becomes final on 5/4/2004 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (718)553-4520.  
On any future correspondence concerning this matter, please refer to  
Aeronautical Study Number 2004-AEA-101-OE.

Signature Control No: 370463-263080

(DNH)

Loretta Martin  
Manager, Airspace Branch

Attachment(s)  
Additional Information  
MA90-2 Attached

Additional Information for ASN 2004-AEA-101-OE

Aeronautical Study 04-AEA-101-OE

PROPOSAL: To construct an antenna tower to a height of 824 feet above ground level (AGL), 1049 feet above mean sea level (AMSL).

LOCATION: The structure would be located 6.27 nautical miles (NM) southeast of Washington Executive/Hyde Field (W32), Brandywine, Maryland.

PART 77 OBSTRUCTION STANDARDS EXCEEDED:

Section 77.23(a)(1) by 324 feet & a height that exceeds 500 feet AGL

NEGOTIATION: was attempted with the proponent but height and location was required to meet planned coverage.

CIRCULARIZED for public comment on February 12, 2004.

AERONAUTICAL OBJECTIONS: none received

AERONAUTICAL STUDY RESULTS:

The proposed structure would not impact any plans on file.

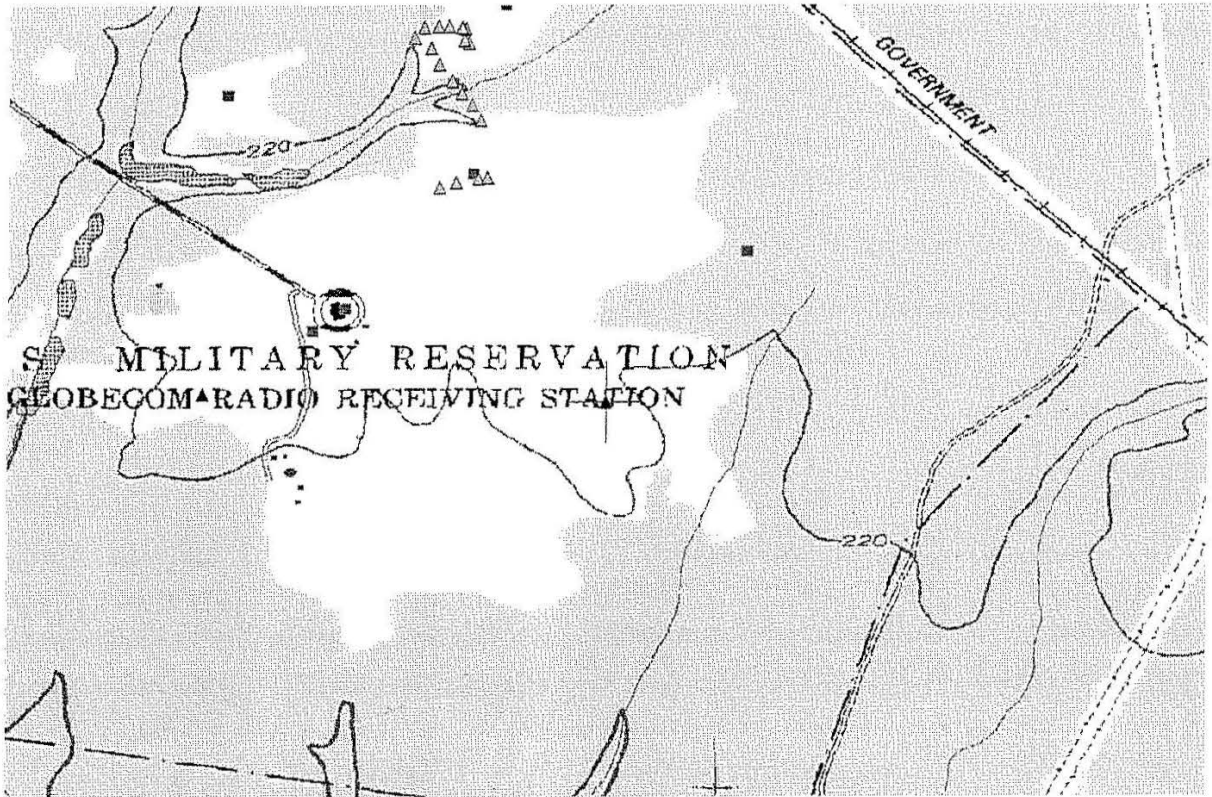
The structure would not interfere with any traffic pattern airspace.

The structure would not adversely impact any present or future VFR or IFR terminal procedure.

The structure would not impact any VFR or IFR enroute procedure.

The structure would not have a cumulative impact on any existing or planned airport.

The structure would exceed obstruction standards and should be obstruction lighted in accordance with FAA AC 70/7460-1K, Chapters 3, 4, 5 and 12, red lights and paint.



TO: Distribution  
FROM: Joseph J. Campo  
SUBJECT: Environmental Assessment for Brandywine Communications Tower  
DATE: 28 October 2004

Dear Sirs:

Geo-Marine, Inc. is under contract to prepare an Environmental Assessment (EA) on construction and operation of a communications tower at Brandywine Communications Receiver site in Prince Georges County, Maryland. Please review the enclosed site photographs and description of the proposed action and alternatives (DOPAA) for potential impacts to resources in the area. Please note that the DOPAA is not intended for public distribution, but will be incorporated in the Draft EA and provided for public comment. In addition, please provide a list of federal and state listed rare, threatened, endangered, and candidate species that are known to occur, or potentially occur on, or in the vicinity of the Brandywine site. Please send your comments to Joseph Campo, Geo-Marine, Inc., 11846 Rock Landing Drive, Suite C, Newport News, Virginia 23606 by 22 November. If you have any questions, please call me at (757) 873-3702.

Sincerely,

Joseph J. Campo, Ph.D.  
Senior Environmental Project Manager

Enclosures: site photographs, DOPAA

Distribution:

Dan Murphy, USFWS, Chesapeake Bay Field Office  
177 Admiral Cochran Drive  
Annapolis MD 21401

Kevin J Sullivan, USDA, Wildlife Services  
1568 Whithall Road  
Annapolis, MD 21401

Robert Beyer, Maryland DNR, Wildlife Division  
580 Taylor Avenue, E-1  
Annapolis, MD 21401

Keith Harris, Environmental Planner, Andrews AFB, 89 CES/CEVP  
1419 Menoher Dr.  
Andrews AFB MD 20762



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401



December 2, 2004

Joseph J. Campo, Ph.D.  
Senior Environmental Project Manager  
Geo-Marine Incorporated  
11846 Rock Landing Dr., Suite C  
Newport News, VA 23606

*RE: Proposed Construction and Operation of 824 ft Tall Communications Tower at  
Brandywine Communications Receiver Site, Prince George's County, MD*

Dear Dr. Campo:

This responds to your letter, dated October 28, 2004, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The federally threatened bald eagle (*Haliaeetus leucocephalus*) nests within the vicinity of the proposed installation boundary. A nest identified as PG-02-02 is located approximately one-quarter mile from the northeast boundary, between the U.S. Government Railroad and MD 381. For further information regarding activity at this nest, Glenn Therres of the Maryland Wildlife and Heritage Division should be contacted at (410) 260-8572. Any construction or forest clearing activities within one-quarter mile of an active nest may impact bald eagles. If such impacts may occur, further section 7 consultation with the U.S. Fish and Wildlife Service may be required.

Except for occasional transient individuals, no other federally proposed or listed endangered or threatened species are known to exist within the project impact area. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally-protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.


An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

A final concern of the Service is the potential impact of communications towers on migratory birds. Communications towers may not be visible to migrating birds in poor weather conditions (e.g., low cloud ceiling, fog, rain, or poor visibility), and have caused massive bird kills when nocturnal migrating species are attracted by the lights of the towers. Wire strikes by diurnal species such as large wading birds, waterfowl, and raptors have also been documented. Communications towers with guy wires and/or lights are therefore known threats to migratory birds, which are Federal trust resources that the Service is authorized to protect. Take (*i.e.*, killing) of migratory birds by any person without authorization may constitute a violation of the Migratory Bird Treaty Act of 1918.

The Service has a migratory bird policy and offers recommendations on reducing migratory bird collisions with communications towers. We encourage you to reference these materials at <http://migratorybirds.fws.gov/issues/towers/comtow.html> and incorporate as many of the design recommendations as possible. A hard copy of the policy and recommendations is also available upon request. Enclosed are the Chesapeake Bay Field Office Recommendations to Reduce Migratory Bird Collisions with Communications Towers, and a Migratory Bird Fact Sheet.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Craig Koppie at (410) 573-4534.

Sincerely,



G. Andrew Moser  
Acting Program Supervisor, Threatened and Endangered Species

Enclosures

cc: Glenn Therres, Maryland Wildlife and Heritage Division, Annapolis, MD



## **Migratory Birds**

All native migratory birds (e.g., waterfowl, shorebirds, passerines, hawks, owls, vultures, falcons) are afforded protection under the Migratory Bird Treaty Act of 1918 (40 Stat. 755; 16 U.S.C. 703-712). Migratory Birds are a federal trust resource responsibility, and the U.S. Fish and Wildlife Service (Service) considers migratory bird concentration areas as environmentally significant.

Communication towers and antennas may pose a collision hazard to migratory birds in flight and may pose a threat to nesting birds attracted to the site, depending on tower height, physical design, lighting, and site location. To avoid potential cumulative adverse impacts to migratory birds, the Service prefers and recommends concealing antennas or attaching new antennas to existing structures. Antennas have been concealed on rooftops; flagpoles; bell, cross, and clock towers; road signs; silos; water towers; monopole towers; and custom projects. Where attachment to an existing (non-tower) structure is not feasible, new transmitters should be co-located on existing towers to avoid construction of new towers. If this is not feasible and tower construction is deemed necessary, tower design should allow for multiple transmitters to be co-located on a single new tower, under 200 feet in height and constructed without lights or guy wires.

Occurrences of mortality from birds colliding with towers under foggy daytime conditions are documented in scientific literature. Occurrences are also documented of birds congregating around towers with aviation warning lights while migrating at night during inclement weather. During these events, birds circling the towers have been killed from colliding with guy wires, other birds, and the ground, and have died from exhaustion. Therefore, to protect migrating birds, communication towers and associated facilities should be sited away from bird concentration areas, which include: traditional migratory flight corridors (e.g., ridges, shorelines, river valleys); stopover or resting areas (e.g., land bounding large bodies of water, wetlands, forests, and natural grasslands); bird reserves (e.g., National Wildlife Refuges, State Wildlife Management Areas, private sanctuaries); and seasonal flight paths (e.g., between feeding and nesting or roosting areas). Some of the primary bird concentration areas of concern in the Maryland/ Delaware/ District of Columbia area include the Chesapeake Bay and coast, Potomac River corridor, Delaware Bay and coast, Delaware River corridor, and the Atlantic Coast. Also, the Service maintains five National Wildlife Refuges in Maryland (Chesapeake Marshlands, Eastern Neck, Martin, Susquehanna, Patuxent Research Refuge) and two National Wildlife Refuges in Delaware (Bombay Hook, Prime Hook). More information about National Wildlife Refuges is provided below.

Birds, other than nocturnal birds such as owls, generally have poor night vision. To allow birds to detect and avoid tower guy wires, the Service recommends increasing the visibility of tower guy wires to birds, particularly at night. Increased visibility should be accomplished without the use of artificial lighting (i.e., through manufacturing, the use of reflective paint or other materials, attaching large balls, or the use of other available technology).



As communication technology advances and tower-based technology becomes obsolete, the Service recommends decommissioning those towers that are no longer needed, particularly towers within bird concentration areas. Tower decommissioning, including removal, should be provided for in any application for license submitted to the FCC.

Information on tower kills, including mechanisms, studies, literature, bibliographies, legislation, links, and summaries by state, is provided on the following website: <http://www.towerkill.com>. Information regarding the affects of lighted structures on migrating birds can be found in the 1996 publication by the World Wildlife Fund and the Fatal Light Awareness Program, entitled; *Collision Course: the hazard of lighted structures and windows to migrating birds*. In addition, the Service's Office of Migratory Bird Management maintains a partial bibliography of over 125 citations (1960-1998) on bird kills at towers and other man-made structures. The bibliography may be accessed at the following website: <http://www.fws.gov/r9mbmo/issues/tower.html>.

### **National Wildlife Refuges**

The Service administers a national system of wildlife refuges. Seven National Wildlife Refuges have been established within Maryland and Delaware, each with a role in protecting the diversity of our Nation's flora and fauna and the natural habitats upon which our native species depend. The National Wildlife Refuge System Administration Act of 1966 (80 Stat. 927; 16 U.S.C. 668dd-668ee) provides guidelines and directives for administration and management of all areas in the refuge system. In order for a commercial cellular tower or antenna facility to be constructed within a National Wildlife Refuge ( i.e., Bombay Hook [DE], Prime Hook [DE], Chesapeake Marshlands, Eastern Neck, Martin, Susquehanna, and Patuxent Research Refuge), a compatibility determination would be required before a Special Use Permit from the Service's Division of Refuges and Wildlife could be granted.

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For further information, please contact:

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U.S. Fish and Wildlife Service  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, Maryland 21401  
Phone:(410) 573-4550  
Fax:(410) 269-0832

## Chesapeake Bay Field Office (USFWS) Recommendations to Reduce Migratory Bird Collisions with Communications Towers

1. Entities proposing to construct a new communications tower are strongly encouraged to co-locate the equipment on an existing tower or structure (e.g., church steeples, flagpoles, bell and clock towers, road signs, silos, water towers, billboards, light poles, bridges, electrical transmission poles, or buildings).
2. If co-location on existing structures is not feasible, then unlit, unguyed structures, with minimal vertical and aerial cross-sectional dimensions are encouraged. To date, this has been accomplished using unguyed monopoles or a lattice structure (preferably with the smallest aerial cross section practical) less than 200 feet above ground level (AGL).
3. If possible, new towers should be located within existing "antenna farms" (clusters of towers). Towers should not be sited in or near wetlands, other known migratory bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.
4. If the Federal Aviation Administration (FAA) requires that a tower must be lit for reasons of aviation safety, then the minimum required amount of pilot warning and obstruction avoidance lighting should be used. Unless otherwise required by the FAA only white strobe lights should be used at night, and these should be the minimum number, intensity, and flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights adversely affect night-migrating birds at a much higher rate than white strobe lights.

If a proposed tower less than 200 ft AGL is required to be lit for aviation safety reasons (e.g., near an airport or along a flight corridor for emergency aircraft), then alternative sites should be sought, unless the alternative sites would have substantially greater environmental impacts than the proposed site.

5. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see *Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute, Washington, D.C., 78 pp*, and *Avian Power Line Interaction Committee (APLIC). 1996. Suggested Practices for Raptor Protection on Power Lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C., 128 pp*. Copies can be obtained via the Internet at <http://www.eei.org/resources/pubcat/enviro/>, or by calling 1-800/334-5453).
6. Towers and appendant facilities should be sited, designed, and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." Road access and fencing should

be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight. However, a larger tower footprint is preferable to the use of guy wires in construction.

7. If substantial numbers of breeding, feeding, or roosting birds are known to occur within the proposed footprint of the tower construction, then the tower should be relocated to an alternative site with lower wildlife activity. Seasonal restrictions should be adopted to avoid "taking" of birds, eggs, or active nests, in those cases where no alternative site is possible.

8. To reduce the number of towers needed in the future, new towers should be designed structurally and electrically to accommodate the applicant's antennas and comparable antennas for at least three additional users, unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower or would increase the footprint of appendant structures.

9. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

10. If a tower is constructed, or proposed for construction, Service personnel and/or researchers from the Communications Towers Working Group or their designees should be allowed access to the site to evaluate bird use, to conduct dead-bird searches, to place net catchments below the towers, or to place radar, infrared, thermal imagery, or acoustical monitoring equipment as necessary to assess and verify bird presence, mortality, or migration near the site and to gain information on the impacts of various tower sizes, configurations, and lighting systems.

11. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use. Tower removal should be bonded or covered by revenues put aside during the first ten years or less after licensing.

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**MARYLAND**  
DEPARTMENT OF  
NATURAL RESOURCES

Robert L. Ehrlich, Jr., Governor

Michael S. Steele, Lt. Governor

C. Ronald Franks, Secretary

May 11, 2005

Dr. Joseph J. Campo  
Senior Environmental Project Manager  
Geo-Marine, Inc.  
11846 Rock Landing Drive, Suite C  
Newport News, VA 23606

**RE: Environmental Review for Description of Proposed Action and Alternatives (DOPAA) for Brandywine Communications Tower, Brandywine Communications Receiver Site, Prince George's County, Maryland.**

Dear Dr. Campo:

For the Proposed SE Tower Alternative, the Wildlife and Heritage Service has a record for state-listed endangered Clasping-leaved St. John's-wort (*Hypericum gymnanthum*) known to occur on the proposed tower site, and may be directly impacted by this proposal.

For the Proposed NE Tower Alternative, the Wildlife and Heritage Service has a record for state-listed endangered Midwestern Gerardia (*Agalinis skinneriana*) and state-listed threatened Sandplain Flax (*Linum intercursum*) known to occur on the proposed tower site, and may be directly impacted by this proposal.

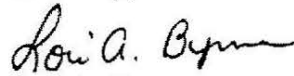
For the Proposed SW Tower Alternative, the Wildlife and Heritage Service has no records for RT&E species known to occur on this proposed tower site. However, for all three Alternatives, the following species of concern could potentially occur on any of these sites, as they are all known to occur in the vicinity:

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Torreyochloa pallida</i>	Pale Mannagrass	Endangered
<i>Polygala polygama</i>	Racemed Milkwort	Threatened
<i>Carex buxbaumii</i>	Buxbaum's Sedge	Threatened
<i>Linum intercursum</i>	Sandplain Flax	Threatened

Page 2  
May 11, 2005

Please consult with Katharine McCarthy of the WHS at (410) 260-8569, in order to develop methods to minimize impacts to the RT&E species on site. Thank you for allowing us the opportunity to review this project.

Sincerely,



Lori A. Byrne,  
Environmental Review Coordinator  
Wildlife and Heritage Service  
MD Dept. of Natural Resources

ER #2004.2399.pg  
Cc: K. McCarthy, WHS



## GEO-MARINE, INC.

11817 Canon Blvd., Suite 402  
Newport News, Virginia 23606

phone: 757.873.8253  
email: [gmi@geo-marine.com](mailto:gmi@geo-marine.com)

fax: 757.873.8292  
website: [geo-marine.com](http://geo-marine.com)

14 March 2005

Maryland Department of Planning  
State Clearinghouse for Intergovernmental Assistance  
Attention: Linda C. Janey, J.D. Director  
Suite 1104  
301 W. Preston Street  
Baltimore, Maryland 21201-2305

RE: Draft Environmental Assessment (EA) for Tower Construction at Brandywine  
Communication Receiver Site, Prince Georges County, Maryland

Dear Ms. Janey:

On behalf of Andrews Air Force Base (AFB), Geo-Marine, Inc. is submitting eight copies of the referenced document. In accordance with Executive Order 12372, Intergovernmental Review of Federal Programs, we request your assistance by reviewing the Draft EA and providing comments. We also request your assistance in advising appropriate agencies of this action and soliciting their comments regarding potential environmental impacts.

Please review this information and respond with comments within 30 days of receiving this letter. Responses and written comments should be directed to: Mr. Keith Harris, REM, Environmental Planner, 89 CES/CEVP, 1419 Menoher Dr., Andrews AFB MD 20762, (301) 981-1653. Thank you for your assistance.

Sincerely,

Joseph J. Campo, Ph.D.  
Senior Environmental Project Manager

cc: Keith Harris, Andrews AFB

Enclosures: eight copies of the Draft EA



April 11, 2005

Mr. Keith Harris  
89 CES/CEVP  
1419 Menoher  
Andrews Air Force Base, MD 20762-4803

Re: Draft Environmental Assessment – Andrews Air Force Base  
Tower Construction at Brandywine Receiver Site  
Prince George's County, Maryland  
State Clearinghouse No. MD20050316-0146

Dear Mr. Harris:

The Maryland Historical Trust (Trust) received a copy of the above-referenced Environmental Assessment through the Maryland State Clearinghouse for Intergovernmental Assistance. In accordance with Section 106 of the National Historic Preservation Act, we have reviewed the project materials provided along with documentation in our records. We are writing to request additional information necessary to evaluate the effect of the proposed undertaking on historic properties and complete the Section 106 consultation.

The report describes the proposed construction of an 824-foot communications tower at the Brandywine Communication Receiver Site in Prince George's County, Maryland. The Brandywine Site, Maryland Inventory of Historic Properties number PG: 85B-13, is not eligible for listing in the National Register of Historic Places and does not contain any archeological resources. Therefore the proposed project will have no direct physical effects on historic properties. The project does have potential to affect the integrity of design, setting, feeling, or association of historic properties within a larger Area of Potential Effect (APE) for visual effects. In accordance with 36 CFR 800, the Air Force should complete the following.

- Determine the undertaking's APE, defined as the area from which the tower will be visible and may diminish characteristics that contribute to the National Register eligibility of a property.
- Identify historic properties in the APE. These should include all properties in the APE that are listed in the National Register of Historic Places and all Maryland Inventory of Historic Properties (MIHP) locations in the APE.
- Evaluate the effect of the proposed undertaking on each listed or eligible property within the APE. This process should consider what visual features contribute to the eligibility of each property. It may be aided by sight-line analysis and simulated photographs of potential views toward the tower.

DIVISION OF HISTORICAL AND  
CULTURAL PROGRAMS

100 Community Place  
Crownsville, MD 21032

PHONE 410-514-7600  
TOLL FREE 1-800-758-0110  
FAX 410-587-4071  
TTY/RELAY 711 or 1-800-735-2258  
WEB [www.mdhousing.org](http://www.mdhousing.org)



Mr. Keith Harris  
Tower Construction at Brandywine Receiver Site  
April 11, 2005  
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The work listed above should be performed by a qualified architectural historian. A statement defining and justifying the APE, a map clearly showing the location of the proposed tower and each historic property in the APE, Determination of Eligibility forms for all previously unevaluated MIHP properties in the APE, and a table summarizing the determined effects should be submitted to the Trust for review and concurrence.

We look forward to receiving the requested information needed to complete the Section 106 review of this undertaking. If you have questions or require assistance, please contact Jonathan Sager (for historic built environment) at [sagerj@dhcd.state.md.us](mailto:sagerj@dhcd.state.md.us) or 410-514-7636 or me (for archeology) at [cole@dhcd.state.md.us](mailto:cole@dhcd.state.md.us) or 410-514-7631. Thank you for providing us this opportunity to comment.

Sincerely,



Elizabeth J. Cole  
Administrator  
Project Review and Compliance  
Maryland Historical Trust

EJC / JES  
200500786

cc: Bob Rosenbush (MDP)  
Gail Rothrock (M-NCPPC)



May 31, 2005

Elizabeth J. Cole  
Administrator  
Project Review and Compliance  
Maryland Historical Trust  
100 Community Place  
Crownsville, MD 21032

Re: United States Air Force Tower Construction  
Brandywine Communications Site, Brandywine, Prince George's Co.  
State Clearinghouse No.: MD20050316-0146

Dear Ms Cole:

Enclosed please find Determination of Eligibility (DOE) forms and other materials for unevaluated properties on the Maryland Inventory of Historic Places that are within the Area of Potential Effect (APE) for the proposed tower construction at the Brandywine Communications Site, Prince George's County. The DOE forms are in print and electronic formats, as requested, and a table of properties and determined effects is also included. This information has been made part of the Environmental Assessment for the project being completed for compliance with the National Environmental Policy Act and the required review under Section 106 of the National Historic Preservation Act of 1966.

If you have any questions or comments, please contact me at (972)423-5480.

Sincerely,

Julian W. Adams  
Sr. Architectural Historian  
GMI

Enc: DOE Forms, print and CD  
Table of properties and determined effects

Ref: 30494.00.01



## PROOF OF PUBLICATION

I, James McDonald, Publisher of The Washington Examiner, (Maryland Edition) a newspaper in the County/City of Montgomery and Prince George's published in the English language for 52 successive weeks or more prior to the issue of 03/15/05, certify that the notice of FINDING OF NO SIGNIFICANT IMPA for GEO-MARINE,INC. attached hereto has been published on 03/15/2005, 03/16/2005, 03/17/2005.

James McDonald

Sworn to and subscribed before me this 17th day of March, 2005.

My Commission expires

My Commission Expires September 30, 2007

Ad number: 17505193  
End date: 03/17/2005  
03/15/2005, 03/16/2005, 03/17/2005  
GEO-MARINE,INC.

**FINDING OF NO SIGNIFICANT IMPACT  
FOR ENVIRONMENTAL ASSESSMENT OF  
THE BRANDYWINE COMMUNICATIONS  
RECEIVER SITE IN PRINCE GEORGES  
COUNTY, MARYLAND**

Pursuant to the Council on Environmental Quality regulations implementing procedural provisions of the National Environmental Policy Act, the Department of the Air Force gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement is not required for construction of a communications tower and associated facilities at Brandywine Communications Receiver site in Prince Georges County, Maryland. For review of the EA, interested parties may contact Mr. Keith Harris, REM, Environmental Planner, 89 CES/CEVP, 1419 Menoher Dr., Andrews AFB MD 20762, (301) 981-1653, or the Maryland Department of Planning, State Clearinghouse for Intergovernmental Assistance, Linda C. Janey, Suite 1104, 301 W. Preston Street, Baltimore, Maryland 21201. Written comments should be submitted within 30 days of this notice.

March 15, 16, & 17, 2005 MD17505193hc