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# ENVIRONMENTAL ASSESSMENT

## CONSTRUCTION OF AN ARMED FORCES RESERVE CENTER AND IMPLEMENTATION OF BRAC 05 REALIGNMENT ACTIONS IN NEWARK, DELAWARE



**February 2009**

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*prepared for*

**99th Regional Support Command**

*prepared by*

**U.S. Army Corps of Engineers**

Mobile District

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*Prepared by:*

U.S. ARMY CORPS OF ENGINEERS  
MOBILE DISTRICT



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*Approved by:*

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Joseph H. Ledlow  
Colonel, Engineer  
Regional Engineer

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# ENVIRONMENTAL ASSESSMENT

**LEAD AGENCY:** Mobile District, U.S. Army Corps of Engineers

**TITLE OF PROPOSED ACTION:** Environmental Assessment for Construction of an Armed Forces Reserve Center and Implementation of BRAC 05 Realignment Actions in Newark, Delaware

**AFFECTED JURISDICTIONS:** New Castle County, Delaware

**PREPARED BY:** Byron G. Jorns, Colonel, U.S. Army Corps of Engineers, Mobile District, District Commander

**APPROVED BY:** Joseph H. Ledlow, Colonel, U.S. Army, 99<sup>th</sup> Regional Support Command, Regional Engineer.

**ABSTRACT:** On September 8, 2005, the Defense Base Closure and Realignment Commission (“BRAC Commission”) recommended that certain realignment actions occur in Newark, Delaware. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission’s recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission’s recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

To implement the BRAC Commission’s recommendations, the U.S. Army proposes to provide the necessary facilities to support the changes in force structure and the consolidation of reserve units. This Environmental Assessment (EA) analyzes and documents environmental effects associated with the U.S. Army’s proposed actions at Newark, DE.

None of the predicted effects of the Proposed Action would result in significant impacts to the quality of the human or biological environment at Newark, DE. Moreover, mitigation would not be necessary to offset impacts. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with the National Environmental Policy Act (NEPA).

**REVIEW PERIOD:** Interested parties are invited to review and comment on the EA and Draft FNSI during the 30-day comment period, March 6, 2009 through April 4, 2009. The EA and Draft FNSI can be accessed on the World Wide Web at:

[http://www.hqda.army.mil/acsim/brac/env\\_ea\\_review.htm](http://www.hqda.army.mil/acsim/brac/env_ea_review.htm)

Copies of the EA can also be viewed at the following local libraries:

Newark Free Library  
750 Library Ave  
Newark, DE 19711

Wilmington Public Library  
10 E 10th St.  
Wilmington, DE 19801

Comments on the EA and Draft FNSI should be submitted during the 30-day public comment period via mail, fax, or electronic mail to the following:

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# EXECUTIVE SUMMARY

## ES.1 INTRODUCTION

On September 8, 2005, the Base Closure and Realignment (BRAC) Commission recommended that certain realignment actions occur in Newark, Delaware. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission's recommendations must now be implemented as provided for in the Defense Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

The following provides the BRAC Commission's recommendations Newark, DE (BRAC Commission, 2005)<sup>1</sup>:

“Close the Major Robert Kirkwood United States Army Reserve Center and its organizational maintenance shop in Newark, DE, and re-locate units to a new Armed Forces Reserve Center (AFRC) and organizational maintenance support facility in Newark, DE, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Delaware Army National Guard units from the William Nelson Armory in Middletown, DE, if the state decided to relocate those units.”

To implement this recommendation, the U.S. Army (Army) proposes to construct a new AFRC and related facilities in Newark, DE to support the BRAC-directed changes in force structure. This Environmental Assessment (EA) analyzes the potential environmental impacts associated with the construction and operation of the new AFRC.

The BRAC law exempts consideration of the need for the action or alternative installations in preparing environmental documentation pursuant to the National Environmental Policy Act (NEPA). However, an appropriate level of NEPA analysis and documentation is required to analyze how the BRAC actions will be implemented. Table ES-1 lists major environmental statutes, regulations, and Executive Orders (EO) applicable to federal projects.

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<sup>1</sup> Although the BRAC language indicates that the Major Robert Kirkwood United States Army Reserve Center is located in Newark, DE it is actually located in Wilmington, DE.

## ES.2 BACKGROUND AND SETTING

Newark, DE is located in New Castle County approximately 15 miles southwest of Wilmington and 60 miles northeast of Baltimore, Maryland

**Table ES-1. Major Environmental Statutes, Regulations, and Executive Orders Applicable to Federal Projects**

Environmental Resources	Statute, Regulation, or Executive Order
Air	Clean Air Act (CAA) of 1970 (PL 91-604), as amended in 1977 (PL 95-95) and 1990 (PL 101-549); U.S. Environmental Protection Agency (USEPA), Subchapter C-Air Programs (40 CFR 50-99)
Noise	Noise Control Act of 1972 (PL 92-574) and Amendments of 1978 (PL 95-609); USEPA, Subchapter G-Noise Abatement Programs (40 CFR 201-211)
Water	Federal Water Pollution Control Act (FWPCA) of 1972 (PL 92-500) and Amendments; Clean Water Act (CWA) of 1977 (PL 95-217); USEPA, Subchapter D-Water Programs (40 CFR 100-149); Water Quality Act of 1987 (PL 100-4); USEPA, Subchapter N-Effluent Guidelines and Standards (40 CFR 400-471); Safe Drinking Water Act (SDWA) of 1972 (PL 93-523) and Amendments of 1986 (PL 99-339); USEPA, National Drinking Water Regulations and Underground Injection Control Program (40 CFR 141-149)
Biological Resources	Migratory Bird Treaty Act of 1918; Fish and Wildlife Coordination Act of 1958 (PL 85-624); Sikes Act of 1960 (PL 86-797) and Amendments of 1986 (PL 99-561), 1997 (PL 105-85 Title XXIX), and 2004 (PL 108-136); Endangered Species Act of 1973 (PL 93-205) and Amendments of 1988 (PL 100-478); Fish and Wildlife Conservation Act of 1980 (PL 96-366); Lacey Act Amendments of 1981 (PL 97-79); Responsibilities of Federal Agencies to Protect Migratory Birds (EO 13186)
Wetlands and Floodplains	Section 401 and 404 of the Federal Water Pollution Control Act of 1972 (PL 92-500); USEPA, Subchapter D-Water Programs 40 CFR 100-149 (105 ref); Floodplain Management-1977 (EO 11988); Protection of Wetlands-1977 (EO 11990); Emergency Wetlands Resources Act of 1986 (PL 99-645); North American Wetlands Conservation Act of 1989 (PL 101-233)
Cultural Resources	NHPA (16 USC 470 et seq.) (PL 89-665) and Amendments of 1980 (PL 96-515) and 1992 (PL 102-575); Protection and Enhancement of the Cultural Environment-1971 (EO 11593); Indian Sacred Sites-1966 (EO 13007); American Indian Religious Freedom Act (AIRFA) of 1978 (PL 95-341); Antiquities Act of 1906; Archaeological Resources Protection Act (ARPA) of 1979 (PL 96-95); Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (PL 101-601); Protection of Historic Properties (36 CFR 800); Consultation and Coordination with Indian Tribal Governments (EO 13175)
Solid Waste/Hazardous Materials and Waste	Resource Conservation and Recovery Act (RCRA) of 1976 (PL 94-580), as Amended by PL 100-582; USEPA, subchapter I-Solid Wastes (40 CFR 239-282); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 USC 9601) (PL 96-510); Toxic Substances Control Act (TSCA) (PL 94-469); USEPA, Subchapter R-Toxic Substances Control Act (40 CFR 700-799); Federal Insecticide, Fungicide, and Rodenticide Control Act (40 CFR 150-189); Emergency Planning and Community Right-to-Know Act (40 CFR 350-399); Federal Compliance with Pollution Control Standards-1978 (EO 12088); Superfund Implementation (EO 12580); Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423)

Environmental Resources	Statute, Regulation, or Executive Order
Health and Safety	Occupational Safety and Health Act of 1970 (29 CFR 1900-2400)
Environmental Justice	Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898); Protection of Children from Environmental Health Risks and Safety Risks (EO 13045)

### ES.3 PROPOSED ACTION

The Proposed Action is to acquire sufficient and suitable land in Newark, DE; to construct a new AFRC and associated support facilities; and relocate four Army Reserve units from the Major Robert Kirkwood Memorial U.S. Army Reserve Center (USARC), as well as two Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE. The purpose of the Proposed Action is to implement the BRAC Commission’s recommendations pertaining to Newark, DE.

**Facilities** – The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

To accommodate the proposed facilities it is likely that some or all of five buildings existing on the preferred site would need to be demolished prior to construction of the proposed facilities. The five structures total 215,900 SF and include a free standing, one-story, steel manufacturing building and four storage/outbuildings.

**Personnel** - Implementing the BRAC Commission’s recommendations in Newark, DE would result in the total assignment of approximately 401 personnel to the new AFRC, 379 of whom are reservists and part-time soldiers and 22 of whom are full-time personnel. Of the total incoming personnel to the new AFRC, only those associated with the DEARNG units (6 full-time, 114 part-time soldiers) would be coming from outside of the Newark, DE area. They would be relocating from Middletown, DE, approximately 15 miles away. Each unit would be drilling on one of three weekends each month; with a maximum drill weekend consisting of approximately 162 personnel.

**Equipment** – The relocation and realignment of reserve units to the proposed AFRC would also bring associated unit vehicles, equipment, and materials. The total number of vehicles that would relocate to

the new AFRC in Newark, DE is projected to be approximately 98, including 65 wheeled vehicles, 18 trailers, and 6 tracked vehicles.

#### **ES.4 REALIGNMENT PROCESS**

The timeline for implementing the action in Newark, DE began in late 2005 with Congressional and Presidential approval of the BRAC law followed by the initiation of this NEPA process and related planning activities in Newark, DE. New BRAC facilities in Newark are programmed through fiscal year 2010 with realignment moves scheduled to occur by 2011. Under the BRAC law, the U.S. Army must initiate all realignments not later than September 15, 2007, and complete all realignments not later than September 15, 2011.<sup>2</sup> This BRAC EA examines the environmental impacts extending into the foreseeable future from efforts that are scheduled to be implemented during the 6-year BRAC window to include the acquisition of land, demolition of existing structures, construction of new facilities, and the operation of those facilities.

#### **ES.5 ALTERNATIVES**

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

Council on Environmental Quality (CEQ) regulations require the inclusion of the No Action alternative in an EA, for it serves as the baseline against which the impacts of the Proposed Action and alternatives can be evaluated. Accordingly, the No Action alternative is evaluated in this EA.

Under the No Action alternative the Army would not implement the proposed action. U.S. Army Reserve units as well as the DEARNG units would continue to train at and operate from their current locations which are over utilized and not properly configured to allow the most effective training of personnel to complete mission requirements. However, routine replacement or renovation actions could occur through normal military maintenance and construction procedures as circumstances independently warrant.

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<sup>2</sup> Section 2904(a), Public Law 101-510, as amended, provides that the Army must "... initiate all closures and realignments no later than two years after the date on which the President transmits a report [by the BRAC Commission] to the Congress ... containing the recommendations for such closures or realignments; and ... complete all such closures and realignments no later than the end of the six year period beginning on the date on which the President transmits the report ..." The President took the specified action on September 15, 2005.

## Preferred Alternative – Ogletown Road

The preferred location for the AFRC and its supporting facilities is a parcel of land located at 1001 Ogletown Road in Newark, DE. The site is approximately 20-acres in size and is located within three miles of Interstate 95. The site is flat and is currently developed with five buildings; one free standing, one-story, steel manufacturing building and four storage/outbuildings, encompassing approximately 215,900 SF of total floor space. The site is equipped with 10,000 kilo-Volt-Ampere (kVA) of underground electrical utility.

The property can accommodate the size and footprint of the proposed facilities while also meeting required AT/FP stand-off distance requirements. The site is serviced by a 10,000 kVA underground electrical utility, and all other utilities services either exist on-site or in close proximity and can easily be extended to the proposed facilities. The parcel is zoned industrial which ensures consistency with current land use. Some or all of the existing structures on-site, however, would need to be demolished prior to construction of the new AFRC facilities.

## ES.6 ENVIRONMENTAL CONSEQUENCES

Under the No Action alternative, the proposed new BRAC facilities would not be constructed, and no environmental impacts would occur.

The Proposed Action would not have any significant adverse effects or impacts on any of the environmental or related resource areas within the local or surrounding areas of the Preferred alternative site in Newark, DE. For all resource areas, the effects are evaluated to be at No Effect or No Significant Effect levels.

A summary of impacts by resource area for the No Action alternative and the Preferred alternative is provided in Table ES-2.

**Table ES-2. Summary of the Impacts of the Proposed Action Alternatives**

<b>Resource</b>	<b>No Action Alternative</b>	<b>Preferred Alternative</b>
<b>Land Use</b>		
<i>Regional Geographic Setting and Location</i>	No effect.	No effect.
<i>Site Land Use</i>	No effect.	No effect.
<i>Current and Future Development in the Region of Influence</i>	No effect.	No significant effect.
<b>Aesthetic and Visual Resources</b>	No effect.	No significant effect.

<b>Resource</b>	<b>No Action Alternative</b>	<b>Preferred Alternative</b>
<b>Air Quality</b>		
<i>Ambient Air Quality Conditions</i>	No effect.	No significant effect.
<i>Meteorology/Climate</i>	No effect.	No effect.
<i>Air Pollutant Emissions at Project Site</i>	No effect.	No significant effect.
<i>Regional Air Pollutant Emissions Summary</i>	No effect.	No significant effect.
<b>Noise</b>	No effect.	No significant effect.
<b>Geology and Soils</b>		
<i>Geologic and Topographic Conditions</i>	No effect.	No significant effect.
<i>Soils</i>	No effect.	No significant effect.
<i>Prime Farmland</i>	No effect.	No effect.
<b>Water Resources</b>		
<i>Surface Water</i>	No effect.	No significant effect.
<i>Wetlands</i>	No effect.	No effect.
<i>Hydrogeology/Groundwater</i>	No effect.	No significant effect.
<i>Floodplains</i>	No effect.	No effect.
<i>Coastal Zone</i>	No effect.	No effect.
<b>Biological Resources</b>		
<i>Vegetation</i>	No effect.	No significant effect.
<i>Wildlife</i>	No effect.	No significant effect.
<i>Threatened, Endangered, and Sensitive Species</i>	No effect.	No effect.
<b>Cultural Resources</b>		
<i>Archaeology</i>	No effect.	No effect.
<i>Built Environment</i>	No effect.	No effect.
<i>Native American Resources</i>	No effect.	No effect.
<b>Socioeconomics</b>		
<i>Economic Development</i>	No effect.	No significant effect.
<i>Demographics</i>	No effect.	No effect.
<i>Environmental Justice</i>	No effect.	No effect.
<i>Protection of Children</i>	No effect.	No effect.
<b>Transportation</b>		
<i>Roadways and Traffic</i>	No effect.	No significant effect.
<i>Public Transportation</i>	No effect.	No effect.
<b>Utilities</b>		

<b>Resource</b>	<b>No Action Alternative</b>	<b>Preferred Alternative</b>
<i>Potable Water Supply</i>	No effect.	No significant effect.
<i>Sanitary Sewer System</i>	No effect.	No significant effect.
<i>Electrical Service and Distribution</i>	No effect.	No significant effect.
<i>Storm water System</i>	No effect.	No significant effect.
<i>Natural gas</i>	No effect.	No significant effect.
<i>Communications</i>	No effect.	No significant effect.
<i>Municipal Solid Waste</i>	No effect.	No significant effect.
<b>Hazardous Materials Use, Handling, and Storage</b>		
<i>Uses of Hazardous Materials</i>	No effect.	No significant effect.
<i>Storage and Handling Areas</i>	No effect.	No significant effect.
<i>Site Contamination and Cleanup</i>	No effect.	No significant effect.
<b>Cumulative Effects</b>	No effect.	No effect.

## ES.7 MITIGATION RESPONSIBILITY AND PERMIT REQUIREMENTS

None of the predicted effects of the Proposed Action would result in significant impacts; therefore, mitigation is not needed, although the Army may consider the use of Best Management Practices (BMPs) in addition to those required by law, regulation, or the Army. The following permits and or plans would be required in implementing the projects identified in this analysis:

- A Sediment and Stormwater Plan and a National Pollutant Discharge Elimination System (NPDES) permit would likely be required.
  - A Notice of Intent for Stormwater Discharges Associated Construction Activity under a NPDES General Permit would be submitted to the Division of Soil and Water Conservation of the Delaware Department of Natural Resources and Environmental Control (DNREC).
  - The Sediment and Stormwater Plan would likely include BMPs to be used during site preparation, earthworks, and construction activities at the site. Potential BMPs may include installation of silt fences, coverage of soil piles with mulch, installation of hay bales, and maintaining exposed surface soils in a damp state.
- Any stormwater discharged off-site via the stormwater drainage ditches would meet all state and local regulatory and permit requirements as specified in Section 9 of Delaware’s Regulations Governing the Control of Water Pollution.
- Depending on the final design of the proposed facilities, a Conditional “No Exposure” Exclusion could be granted and the facility would not need to monitor or develop a Stormwater Plan. A

Conditional “No Exposure” Exclusion is a state requirement and is granted upon approval of a “No Exposure” Certification Form.

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## 1.0 PURPOSE, NEED, AND SCOPE

### 1.1 INTRODUCTION

On September 8, 2005, the Base Closure and Realignment (BRAC) Commission recommended that certain realignment actions occur at U.S. Army Reserve (USAR) components in Newark, DE. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission's recommendations must now be implemented as provided for in the Defense Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

The BRAC law exempts consideration of the need for closing or realigning a military installation or the consideration of alternative installations in preparing environmental documentation pursuant to the National Environmental Policy Act (NEPA). However, NEPA analysis and documentation is required to analyze how the BRAC actions will be implemented.

The following are the BRAC Commission's recommendations for USAR components in Newark, DE (BRAC Commission, 2005)<sup>3</sup>:

“Close the Major Robert Kirkwood United States Army Reserve Center and its organizational maintenance shop in Newark, DE, and re-locate units to a new Armed Forces Reserve Center and organizational maintenance support facility in Newark, DE, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Delaware Army National Guard units from the William Nelson Armory in Middletown, DE, if the state decided to relocate those units.”

The BRAC Commission's recommendations considered the Secretary of Defense's justifications for recommended realignment actions at USAR components in Newark, DE. The Secretary's justifications, as quoted, are contained in Appendix A.

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<sup>3</sup> Although the BRAC language indicates that the Major Robert Kirkwood United States Army Reserve Center is located in Newark, DE it is actually located in Wilmington, DE.

To implement this recommendation, the U.S. Army (Army) proposes to acquire suitable land and construct a new Armed Forces Reserve Center (AFRC) and related facilities in Newark, DE to support the BRAC-directed changes in force structure. This Environmental Assessment (EA) analyzes the potential environmental impacts associated with the land acquisition as well as with the construction and operation of the new AFRC.

Details on the Proposed Action are provided in Section 2.0.

## **1.2 PURPOSE AND NEED**

The purpose of the Proposed Action is to implement those elements of the BRAC law that contain the BRAC Commission's recommendation pertaining to USAR components in Newark, DE.

The need for the Proposed Action is to improve the ability of the Nation to respond rapidly to challenges of the 21<sup>st</sup> Century. The Army is legally bound to defend the United States and its territories, support national policies and objectives, and defeat nations responsible for aggression that endangers the peace and security of the United States. To carry out these tasks, the Army must adapt to changing world conditions and must improve its capabilities to respond to a variety of circumstances across the full spectrum of military operations.

***Base Closure and Realignment.*** In previous rounds of BRAC, the explicit goal was to save money and downsize the military to reap a "peace dividend." In the 2005 BRAC round the Department of Defense's (DoD's) recommendations sought to reorganize its installation infrastructure to more efficiently support its forces, increase operational readiness and facilitate new ways of doing business. Thus, BRAC represents more than cost savings. It supports advancing the goals of transformation, improving military capabilities, and enhancing military value. The Army needs to carry out the BRAC Commission's recommendations for USAR components in Newark, DE to achieve the objectives for which Congress established the BRAC process.

For USAR components in Newark, DE, this BRAC action is expected to significantly enhance the readiness of the affected units by providing adequate classroom, storage, and administrative space required to train to Army standards and to meet anti-terrorism/force protection (AT/FP) standards. At the same time, these actions are expected to reduce manpower and associated operating costs for maintaining existing facilities and properties.

### **1.3 SCOPE**

This EA identifies, documents, and evaluates the potential environmental effects of the proposed BRAC realignment actions in Newark, DE including the acquisition of land, any needed demolition of existing structures, and the construction and operation of the new facilities. This EA has been developed in accordance with NEPA and implementing regulations issued by the President's Council on Environmental Quality (CEQ) and the Army.<sup>4</sup> The purpose of the EA is to inform decision makers and the public of the likely environmental consequences of the Proposed Action and the alternatives for implementing it.

The Defense Base Closure and Realignment Act of 1990 specifies that NEPA does not apply to actions of the President, the Commission, or the DoD, except "(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated" (Sec. 2905(c)(2)(A), Public Law 101-510, as amended). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Sec. 2905(c)(2)(B)). The Commission's deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this EA does not address the need for realignment.

### **1.4 PUBLIC PARTICIPATION AND INVOLVEMENT**

The Army invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision making process.

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<sup>4</sup> Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 Code of Federal Regulations (CFR) Parts 1500–1508, and Environmental Analysis of Army Actions, 32 CFR Part 651.

Public participation opportunities with respect to this EA and decision making on the Proposed Action are guided by 32 Code of Federal Regulations (CFR) Part 651. This EA is being made available to the public for 30 days, along with a draft Finding of No Significant Impact (FNSI). During this time the Army will consider any comments submitted by individuals, agencies, or organizations on the Proposed Action, the EA, or draft FNSI. At the conclusion of the comment period, the Army may, if appropriate, execute the FNSI and proceed with implementing the Proposed Action. If it is determined that implementing the Proposed Action would result in significant impacts, the Army will commit to mitigation actions sufficient to reduce impacts below significance levels or publish in the *Federal Register* a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

Interested parties are invited to review and comment on the EA and Draft FNSI within 30 days of their publication. The EA and Draft FNSI can be accessed on the World Wide Web at:

[http://www.hqda.army.mil/acsim/brac/env\\_ea\\_review.htm](http://www.hqda.army.mil/acsim/brac/env_ea_review.htm)

Copies of the EA can also be viewed at the following local library:

Newark Free Library  
750 Library Ave  
Newark, DE 19711

Wilmington Public Library  
10 E 10th St.  
Wilmington, DE 19801

Comments on the EA and Draft FNSI should be submitted during the 30-day public comment period via mail, fax, or electronic mail to the following:

Mona Garrett  
99<sup>th</sup> Regional Support Command  
99 Soldiers Lane  
Coraopolis, PA 15108-2550  
email: [mona.garrett@usar.army.mil](mailto:mona.garrett@usar.army.mil)  
Fax No. (412) 604-8156

## **1.5 IMPACT ANALYSIS PERFORMED**

An interdisciplinary team has analyzed the Proposed Action and alternatives in light of existing conditions and has identified relevant beneficial and adverse impacts associated with the action. Section 1.0 of the EA provides the purpose, need, and scope. The Proposed Action is described in Section 2.0 and the alternatives, including the No Action alternative, are described in Section 3.0. Conditions existing as of 2008, considered to be the “baseline” conditions, are described in Section 4.0 - Affected

Environment and Environmental Consequences. The expected impacts of the Proposed Action, also described in Section 4.0, are presented immediately following the description of baseline conditions for each environmental resource addressed in the EA. Section 4.0 also addresses the potential for cumulative effects and mitigation measures are identified where appropriate. Section 5.0 presents the findings and conclusions.

## **1.6 FRAMEWORK FOR ANALYSIS**

The selection of the Preferred Alternative rests on numerous factors such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the Army is guided by relevant statutes (and their implementing regulations) and Executive Orders that establish standards and provide guidance on environmental and natural resources management and planning.

### **1.6.1 Relevant Statutes and Executive Orders**

Relevant statutes include, but are not limited to the Clean Air Act (CAA), Clean Water Act (CWA), Noise Control Act, Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), the Farmland Protection Policy Act (FPPA), Native American Graves Protection and Repatriation Act (NAGPRA), and the American Indian Religious Freedom Act (AIRFA). Executive Orders bearing on the Proposed Action include Executive Order (EO) 11988 (Floodplain Management), EO 11990 (*Protection of Wetlands*), EO 12088 (*Federal Compliance with Pollution Control Standards*), EO 12580 (*Superfund Implementation*), EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*), EO 13045 (*Protection of Children from Environmental Health Risks and Safety Risks*), EO 13175 (*Consultation and Coordination with Indian Tribal Governments*), EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*), and EO 13423 (*Strengthening Federal Environmental, Energy, and Transportation Management*). These authorities are addressed in various sections throughout this EA when relevant to environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at <http://www.denix.osd.mil>.

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

### **2.1 INTRODUCTION**

This section describes the Army's Proposed Action for implementing the BRAC Commission's recommendations for USAR components in Newark, DE. The following are the BRAC Commission's recommendations for Newark, DE (BRAC Commission, 2005)<sup>5</sup>:

“Close the Major Robert Kirkwood United States Army Reserve Center and its organizational maintenance shop in Newark, DE, and re-locate units to a new Armed Forces Reserve Center and organizational maintenance support facility in Newark, DE, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Delaware Army National Guard units from the William Nelson Armory in Middletown, DE, if the state decided to relocate those units.”

### **2.2 PROPOSED ACTION/IMPLEMENTATION PROPOSED**

The Proposed Action is to acquire sufficient and suitable land in Newark, DE and construct and operate a new AFRC and associated support facilities for four Army Reserve units relocating from the Major Robert Kirkwood Memorial U.S. Army Reserve Center (USARC), as well as two Delaware Army National Guard (DEARNG) units relocating from the William Nelson Armory in Middletown, DE. Figure 2-1 provides a general area map indicating the location of the proposed project site in Newark, DE.

The Proposed Action is further detailed below, in the *Facilities* (Section 2.2.1), *Equipment* (Section 2.2.2), and *Personnel* (Section 2.2.3) sub-sections.

#### **2.2.1 Facilities**

The proposed AFRC would require a minimum of 9.5 acres of land in Newark, DE, which would be acquired by the Army to provide a 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include a Vehicle Maintenance Shop

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<sup>5</sup> Although the BRAC language indicates that the Major Robert Kirkwood United States Army Reserve Center is located in Newark, DE it is actually located in Wilmington, DE.

**Figure 2-1. Newark, DE Area Map**



(VMS) and an unheated storage building. The approximate size of the AFRC and the additional support facilities are provided in Table 2-1. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

**Table 2-1. AFRC Complex Building Sizes**

<b>Building</b>	<b>Approximate Size (square feet (SF))</b>
Armed Forces Reserve Center	80,994
Vehicle Maintenance Shop	8,050
Unheated-unit storage building	1,361

Source: U.S. Army, 2008

Supporting improvements proposed to compliment the AFRC and associated facilities include land clearing, paving, fencing, the extension of utilities to service the project, and general site improvements. Access for the disabled would be provided. Physical security measures, including maximum stand-off distance from roads, parking areas and vehicle unloading areas, would be incorporated into the facility designs and siting. Berms, heavy landscaping, and bollards would be used to prevent access when standoff distances cannot be maintained (U.S. Army, 2008).

To accommodate the proposed facilities it is likely that some or all of five buildings existing on the preferred site would need to be demolished prior to construction of the proposed facilities. The five structures total 215,900 SF and include a free standing, one-story, steel manufacturing building and four storage/outbuildings.

The preferred location for the facilities is described further under the Preferred Alternative – Ogletown Road in Section 3.2 – *Alternatives*.

### **2.2.2 Personnel**

Implementing the BRAC Commission’s recommendations in Newark, DE would result in the total assignment of approximately 401 personnel to the new AFRC, 379 of whom are reservists and 22 of whom are full-time personnel (see Table 2-2 for breakdown of personnel by unit relocating to the new AFRC complex). Of the total incoming personnel to the new AFRC, only those associated with the DEARNG units (6 full-time, 114 reservist) would be coming from outside of the Newark, DE area. They would be relocating from Middletown, DE, approximately 15 miles away. However, the BRAC realignment action would not result in a workforce increase within the Region of Influence (ROI), in this

case New Castle County, as the number of personnel from the USAR and DEARNG units would remain the same. Each unit would be drilling on one of three weekends each month, meaning that not all personnel would be using the facilities on the same weekend. The maximum number of personnel using the facilities on a drill weekend would be approximately 162 (U.S. Army, 2007a). The potential direct and/or cumulative impacts on the environment from the increase in personnel associated with the new AFRC are considered in this EA. Table 2-2 provides a breakdown of the number of personnel by unit relocating to the new AFRC complex.

**Table 2-2. 2005 BRAC Action – Newark, DE AFRC: Personnel Changes**

<b>Action</b>	<b>Organization</b>	<b>From</b>	<b>Total Number of Reservists</b>	<b>Total Number of Full-time Personnel</b>
Incoming	Major Robert Kirkwood Memorial USARC 80 BN (PN/HS)	Newark, DE	112	5
Incoming	Major Robert Kirkwood Memorial USARC 7221 U INSTL MED SPT	Newark, DE	66	2
Incoming	Major Robert Kirkwood Memorial USARC 374 HHD CO	Newark, DE	27	8
Incoming	Major Robert Kirkwood Memorial USARC 946 DET 1 CO TRK	Newark, DE	60	1
Incoming	DEARNG 160th Engineer Company	Middletown, DE	75	4
Incoming	DEARNG DET 1 150th Engineer Company	Middletown, DE	39	2
		<b>TOTAL</b>	<b>379</b>	<b>22</b>

Source: U.S. Army, 2007b; 2007c

### 2.2.3 Equipment

The relocation and realignment of units to the proposed AFRC would also bring associated unit vehicles, equipment, and materials. The total number of vehicles that would relocate to the new AFRC in Newark, DE is projected to be approximately 98, including 65 wheeled vehicles, 18 trailers, and 6 tracked vehicles. Table 2-3 provides a breakdown of the number of vehicles by reserve unit relocating to the AFRC complex.

**Table 2-3. 2005 BRAC Action – Newark, DE AFRC: Equipment Relocations**

<b>Action</b>	<b>Organization</b>	<b>From</b>	<b>Total Number: Wheeled Vehicles</b>	<b>Total Number: Trailers</b>	<b>Total Number: Tracked Vehicles</b>
Incoming	Major Robert Kirkwood Memorial USARC 80 BN (PN/HS)	Newark, DE	0	0	0
Incoming	Major Robert Kirkwood Memorial USARC 7221 U INSTL MED SPT	Newark, DE	0	0	0
Incoming	Major Robert Kirkwood Memorial USARC 374 HHD CO	Newark, DE	5	3	0
Incoming	Major Robert Kirkwood Memorial USARC 946 DET 1 CO TRK	Newark, DE	21	0	0
Incoming	DEARNG 160th Engineer Company	Middletown, DE	15	3	0
Incoming	DEARNG DET 1 150th Engineer Company	Middletown, DE	24	12	6
		<b>TOTAL</b>	<b>65</b>	<b>18</b>	<b>6</b>

Source: U.S. Army, 2007b; 2007c

### 2.3 SCHEDULE

Under the BRAC law, the Army must initiate all realignments not later than September 15, 2007, and complete all realignments not later than September 15, 2011.<sup>6</sup>

Implementation of the proposed action would occur over a span of approximately two years, as shown in the schedule contained in Table 2-4.

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<sup>6</sup> Section 2904(a), Public Law 101-510, as amended, provides that the Army must "... initiate all closures and realignments no later than two years after the date on which the President transmits a report [by the BRAC Commission] to the Congress ... containing the recommendations for such closures or realignments; and ... complete all such closures and realignments no later than the end of the six year period beginning on the date on which the President transmits the report ... " The President took the specified action on September 15, 2005.

**Table 2-4. Schedule of Newark, DE 2005 BRAC Project**

<b>Project Number</b>	<b>Project Title</b>	<b>Estimated Construction Start</b>	<b>Estimated Construction Completion</b>	<b>Estimated Unit Relocation</b>
64800	Armed Forces Reserve Center	April 2009	February 2011	No later than September 15, 2011

Source: U.S. Army, 2008

## **3.0 ALTERNATIVES**

### **3.1 INTRODUCTION**

A key principle of NEPA is that agencies are to give full consideration to all reasonable alternatives to a proposed action. Considering alternatives helps to avoid unnecessary impacts and allows analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be affordable, capable of implementation, and satisfactory with respect to meeting the purpose of and need for the action. The following discussion identifies alternatives considered by the Army and identifies whether they are feasible and, hence, subject to detailed evaluation in this EA.

Alternatives for implementing the Proposed Action have been examined according to three variables: the means to accommodate realigned units, siting of new construction, and schedule. This section presents the alternatives available for implementing the Proposed Action. This section also describes the No Action alternative, under which the Proposed Action would not be implemented.

### **3.2 ALTERNATIVES**

The BRAC Commission's recommendations direct that the existing Major Robert Kirkwood USARC and its OMS in Newark, DE be closed and the units relocated to a new AFRC and OMS to be constructed in Newark, DE, if suitable land can be acquired, and that the facilities be able to accommodate Army National Guard units from the William Nelson Armory in Middletown, DE, if the state decides to relocate those units.

Construction of new facilities is driven by the need to ensure adequate space is available for the mission requirements of the realigning units. Upon reviewing available land for purchase, the Army originally identified ten locations to be assessed for their suitability for construction of the proposed AFRC in an Available Site Identification and Validation (ASIV) Report (USACE, 2007). The designated search area for this original ASIV, dated August 2007, extended beyond the city limits of Newark, DE to include any parcels within 10 miles of those limits. All ten sites were located within the 10 mile boundary outside of the city limits. However, being outside of the city limits, these sites were not compliant with the BRAC Commission's recommendations. As a result, a revised search was conducted within the city limits of Newark, DE only. The following criteria were used to determine a site's feasibility for implementing the Proposed Action:

- Net usable area – 9.5 acres
- Meets AT/FP set back requirements
- Site will support intended construction and is environmentally clean
- Ready access to public utilities
- Reasonable cut or fill requirements
- Proximity to major roadway corridor
- Expectation that the fair market appraisal will support the purchase price – i.e. land is within budget
- Meets appropriate zoning considerations
- Property is within Newark, DE

Due to Newark's mature stage of development, the general quantity and quality of sites available within the revised designated search area proved to be diminished when compared to the sites identified within the original designated search area. As a result, a piece of property along Ogletown Road was the only site identified that met the above criteria and was available for purchase. This site is identified as the preferred site in the second ASIV Report prepared in May 2008 (UASCE, 2008).

As discussed above, over the course of two searches the Army identified a total of eleven potential sites where the proposed AFRC complex might be sited, and evaluated each site to determine whether these locations could be considered reasonable alternatives for implementing the Proposed Action. Because the original ten sites were located outside of the Newark, DE city limits, they were not in compliance with the BRAC Commission's recommendations and were therefore determined not to be viable alternatives. Those ten sites are not carried forward for analysis in this EA. Only the one site identified during the second search for properties was considered a reasonable alternative (the Preferred Alternative) and is analyzed in depth in this EA.

### ***Preferred Alternative – Ogletown Road***

Under the Preferred Alternative, the AFRC, VMS, and unheated storage building would be constructed on a parcel of land located at 1001 Ogletown Road in Newark, DE. The site is approximately 20-acres in size, is zoned industrial, and is located within three miles of Interstate 95. The site is flat and is currently developed with five buildings, a free standing one-story steel manufacturing building and four storage/outbuildings, encompassing approximately 215,900 SF of total floor space including offices, a kitchen, conference, room, and open areas, one drive in dock, and eight tail gate docks. The site is

equipped with 10,000 kilo-Volt-Ampere (kVA) of underground electrical utility (USACE, 2008) and all other utilities exist on or near the site and could easily be extended to the proposed facilities.

The property can accommodate the size and footprint of the proposed facilities while also meeting required AT/FP stand-off distance requirements. The parcel is zoned industrial and ensures consistency with current land use. It also ensures adequate facilities for all realigned Army units and fully accommodates the DEARNG, as directed by the BRAC law.

A disadvantage of the site is that some or all of the existing structures on the site would need to be demolished prior to construction of the new AFRC facilities. This alternative is identified as the Preferred Alternative and is fully evaluated in the EA. Figure 3-1 illustrates the Preferred Alternative site.

### **Scheduling Alternatives**

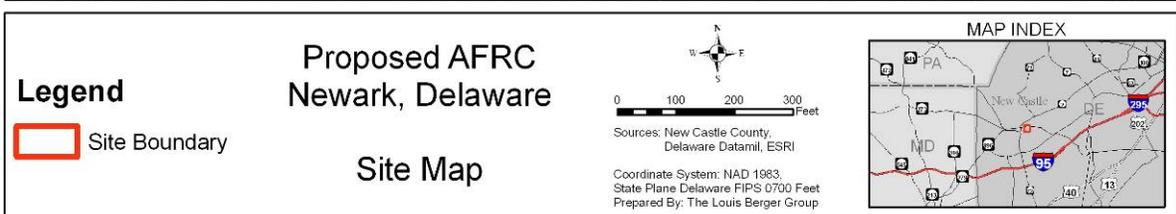
The schedule for implementing the Proposed Action must balance the timeframes for constructing the new facilities and the planned arrival dates of incoming units, all within the 6-year limitation of the BRAC law (see Section 2.3). Per the BRAC Law, the proposed realignment actions for Newark, DE were initiated prior to September 15, 2007 as discussed in Section 2.3. Completion of realignment prior to February 2011 is not feasible due to the time required to design and construct the new facilities. Shifting of schedules to accomplish realignment at a date later than September 15, 2011 would unnecessarily delay the realization of benefits to be gained. In addition, Congress requires all BRAC actions to be completed by September 15, 2011. Since earlier implementation is not possible, and since delay is avoidable and unnecessary, alternative schedules are not further evaluated in this EA.

### **No Action Alternative**

CEQ regulations require the No Action alternative to be included in an EA, for it serves as the baseline against which the impacts of the proposed action and alternatives will be evaluated. Accordingly, the No Action alternative is evaluated in this EA.

Under the No Action alternative the Army would not implement the Proposed Action. U.S. Army Reserve units as well as the DEARNG units would continue to train at and operate from their current locations which are over utilized and not properly configured to allow the most effective training of personnel to complete mission requirements. However, routine replacement or renovation actions could occur through normal military maintenance and construction procedures as circumstances independently warrant.

**Figure 3-1. Preferred Site for the Proposed AFRC at Newark, DE**



## **4.0 AFFECTED ENVIRONMENT AND CONSEQUENCES**

### **4.1 INTRODUCTION**

This section describes the current environmental conditions of the areas that would be affected should the Proposed Action be implemented. It also analyzes the potential effects arising from implementing the Proposed Action. The description of environmental conditions represents the baseline conditions, or the “as is” or “before the action” conditions at the proposed site and is defined as the level of operations and environmental conditions as of 2008. The baseline facilitates subsequent identification of changes in conditions that would result from the realignment. The environmental consequences portion represents the culmination of scientific and analytic analysis of potential effects arising from implementing the Proposed Action. Direct, indirect, and cumulative effects of the Proposed Action are also addressed.

For each environmental resource area the baseline conditions are presented first followed immediately thereafter by evaluation of the potential impacts of the No Action and the Preferred Alternatives. Where appropriate and definable, a specific Region of Influence (ROI) is indicated for a given resource area.

### **4.2 LAND USE**

#### **4.2.1 Affected Environment**

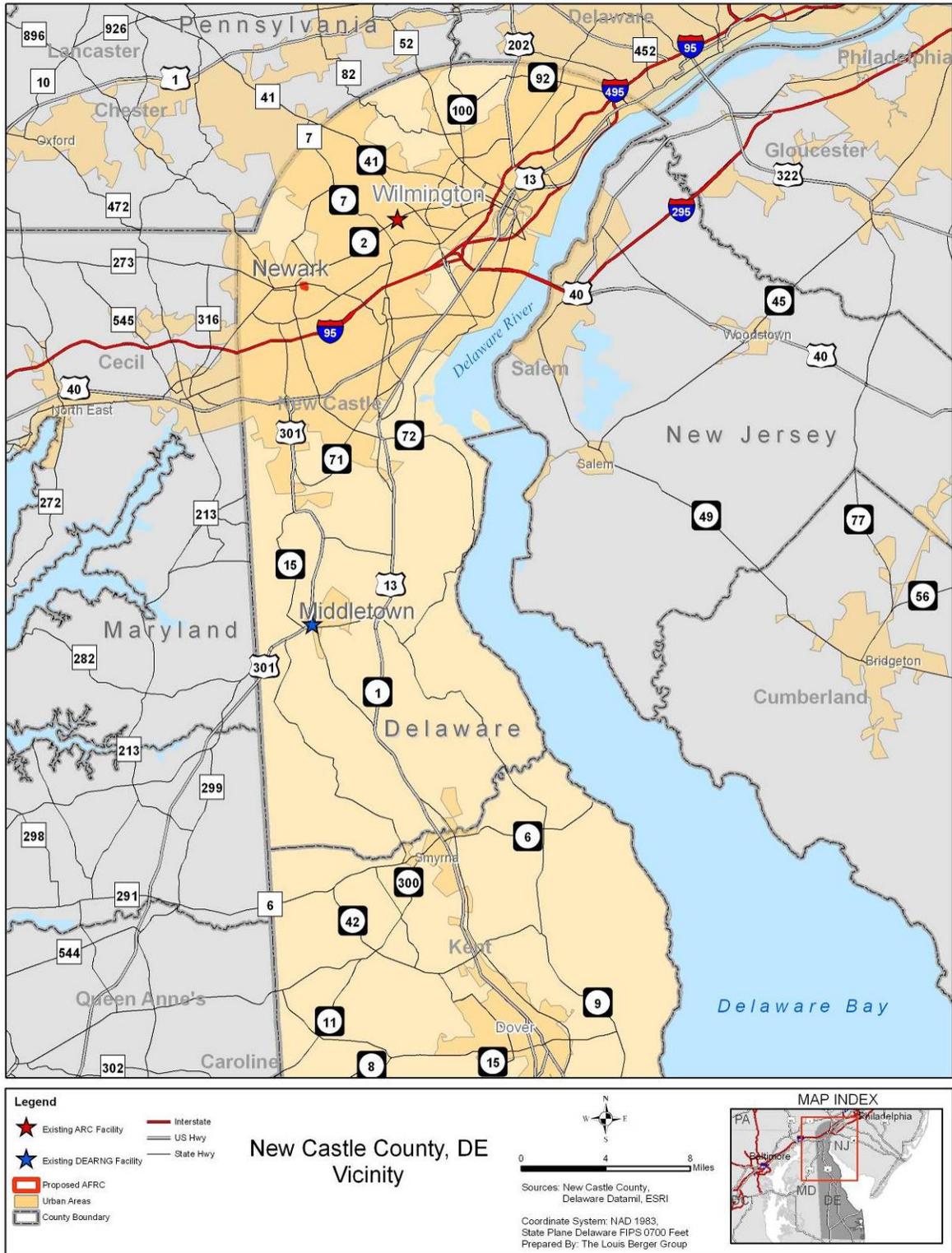
The ROI for land use is defined as the New Castle County, Delaware.

##### ***4.2.1.1 Regional Geographic Setting and Location***

New Castle County is the northern most of the three counties that make up Delaware (Figure 4-1). Adjacent counties include Chester and Delaware, Pennsylvania to the north, Dover, Delaware to the south, Gloucester and Salem, New Jersey to the east, and Cecil and Kent, Maryland to the west. The state’s largest city, Wilmington, is located in the northeastern portion of New Castle County. New Castle County is comprised of 426.27 square miles (U.S. Census, 2008) and consists of developed areas with residential, commercial, and industrial facilities, as well as agricultural lands. The County’s 2006 population estimate was 525,587 (U.S. Census, 2008). The County Seat is Wilmington.

The preferred site for the Proposed Action is located at 1001 Ogletown Road in the city of Newark, Delaware, which is a 9.3-square mile city situated in New Castle County. The city is located approximately 15 miles southwest of Wilmington and 60 miles northeast of Baltimore, Maryland and is

**Figure 4-1. New Castle County Vicinity Map**



served by Interstate 95 (I-95), State Routes 2, 273, and 896, county and municipal roads.

#### **4.2.1.2 Site Land Use**

In 2007, the Delaware Office of Management and Budget published a statewide update of Land Use and Land Cover data as part of a larger project to update statewide orthophotography, elevation data, and land use/land cover (Delaware, 2007). According to the 2007 Land Use Land Cover dataset, which updates the 2002 Land Use/Land Cover data, existing land use within New Castle County is summarized in Table 4-1.

**Table 4-1. 2007 Land Use/Land Cover Data for New Castle County, Delaware**

<b>Land Use</b>	<b>Acres</b>	<b>Percent of County</b>
Airports	1,207.99	0.60%
Commercial	121.78	0.06%
Communication - antennas	20.76	0.01%
Confined Feeding Operations/Feedlots/Holding	156.45	0.08%
Cropland	71,083.62	35.37%
Deciduous Forest	3614.91	1.80%
Farmsteads and Farm Related Buildings	2,826.34	1.41%
Herbaceous Rangeland	559.80	0.28%
Highways/Roads/Access roads/Freeways/Interstates	5,617.32	2.80%
Idle Fields	930.96	0.46%
Industrial	5713.63	2.84%
Institutional/Governmental	4,908.45	2.44%
Junk/Salvage Yards	191.70	0.10%
Man-made Reservoirs and Impoundments	216.86	0.11%
Marinas/Port Facilities/Docks	557.15	0.28%
Mixed Rangeland	339.88	0.17%
Mixed Urban or Built-up Land	3,623.53	1.80%
Mobile home Parks/Courts	902.90	0.45%
Multi Family Dwellings	5,005.95	2.49%
Orchards/Nurseries/Horticulture	454.78	0.23%
Other Agriculture	29.81	0.01%
Other Commercial	47.11	0.02%
Other Transportation/Communication	38.14	0.02%
Other Urban or Built-up Land	5,895.92	2.93%
Parking Lots	52.13	0.03%
Pasture	1,283.68	0.64%
Railroads	626.42	0.31%

Land Use	Acres	Percent of County
Recreational	6,205.37	3.09%
Retail Sales/Wholesale/Professional Services	9,265.00	4.61%
Single Family Dwellings	67,360.44	33.52%
Truck Crops	61.10	0.03%
Utilities	1,422.85	0.71%
Vehicle Related Activities	394.76	0.20%
Warehouses and Temporary Storage	262.58	0.13%
<b>TOTAL</b>	<b>201,000.07</b>	<b>100.00%</b>

Source: Delaware, 2007

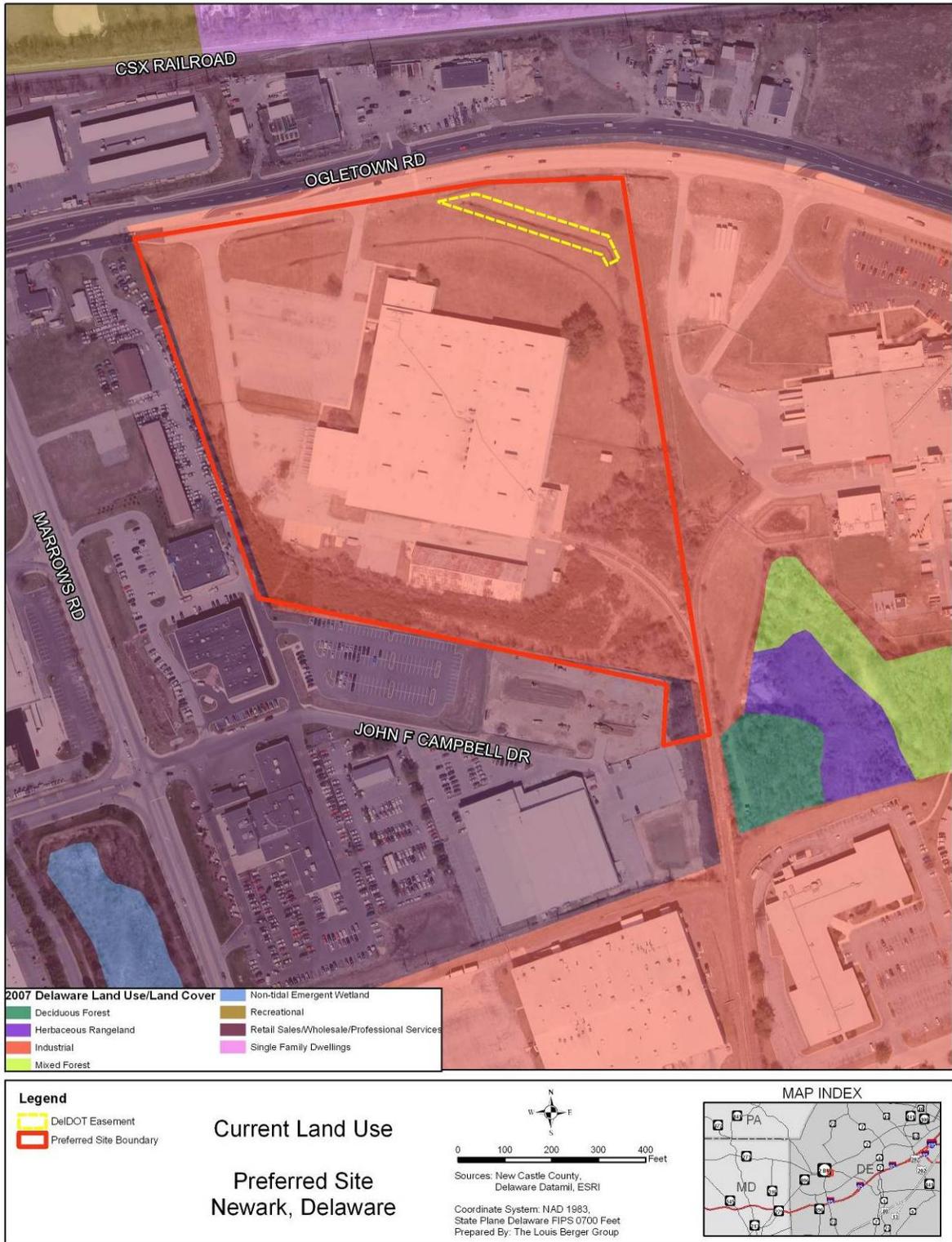
Other land use categories are found in Delaware; however, these categories make up negligible percentages of land in New Castle County. These land use categories include Bays and Coves; Clear-cut; Evergreen Forest; Extraction; Inland Natural Sandy Areas; Mixed Forest; Natural Lakes and Ponds; Non-tidal Emergent Wetland; Non-tidal Forested Wetland; Non-tidal Open Water; Non-tidal Scrub/Shrub Wetland; Non-tidal Shoreline; Shrub/Brush Rangeland; Tidal Emergent Wetland; Tidal Forested Wetland; Tidal Open Water; Tidal Scrub/Shrub Wetland; Tidal Shoreline; Transitional (including cleared, filled, and graded); and Waterways/Streams/Canals.

The preferred site encompasses approximately 20 acres of developed, industrial land and contains a free-standing, one-story steel warehouse building along with four storage/outbuildings. There are also large areas of mowed lawn with several landscape trees around the perimeter of the warehouse building. There is an easement to Delaware Department of Transportation (DOT) for stormwater management that traverses the northeast corner of the property (see Figure 4-2 for approximate location of easement). Current land use for the site is designated as Industrial and the site is zoned for industrial development (Delaware, 2007) (see Figure 4-2).

#### ***4.2.1.3 Current and Future Development in the Region of Influence***

The ROI for the Proposed Action is New Castle County. The county is part of the Philadelphia-Camden-Wilmington Metropolitan Statistical Area (MSA), which consists of the metropolitan area surrounding Philadelphia, Pennsylvania. This region contains built-up urban areas and is densely populated with a population of approximately 5.8 million (BEA, 2006). The Philadelphia-Camden-Wilmington MSA is ranked the fifth largest MSA in the country (BEA, 2006). The 1996-2006 average annual growth rate of per capita personal income (PCPI) was 4.7 percent. The average annual growth rate for the nation was 4.3 percent (BEA, 2006). The ROI is described in further detail in Section 4.10, Socioeconomics.

**Figure 4-2. Current Land Use – Preferred Site**



## 4.2.2 Environmental Consequences

Impacts to land use were determined by the following criteria:

*No Effect* – No impacts to surrounding land use from the proposed project.

*No Significant Effect* – The impact to land use would be measurable or perceptible, but would be limited to a relatively small change in land use that is still consistent with the surrounding land uses.

*Significant Effect* – The impact to land use would be substantial. Surrounding land uses are expected to substantially change in the short- and long-term. The action would not be consistent with the surrounding land use.

### 4.2.2.1 No Action Alternative

Under the No Action alternative, there would be no changes in land use at the Ogletown Road location; therefore, there would be no effects on Land Use.

### 4.2.2.2 Preferred Alternative – Ogletown Road

**Regional Geographic Setting and Location** - No effects are expected on the local or regional setting as a result of the implementing the Proposed Action under the Preferred Alternative. Impacts to land use on the site are expected to be limited in scope to the site itself.

**Site Land Use** - Implementation of the Proposed Action at the preferred site would not change the existing land use of the site; therefore, no effects would be expected. Implementing the Proposed Action at the preferred site would be consistent with the city of Newark's zoning for industrial development. The Delaware DOT easement located in the northeast portion of the property would continue to be used for stormwater management and the area would not be developed for construction under the Proposed Action; therefore, no effects to the current easement would be expected.

There is also a rail spur that enters the property in the southeast corner and was used by the former Temple Inland Box Plant. This spur is no longer in use and can be abandoned in place and removed.

The construction of the AFRC and related facilities would remove the site from availability for potential future use or development for other uses.

**Current and Future Development in the Region of Influence** – Effects from construction and operation of the new AFRC would not be significant since the project would be compatible with

Newark zoning. Development impacts associated with project construction within the ROI are discussed in Section 4.10 *Socioeconomics*. In general, short-term construction requirements and no net increase in personnel living within the ROI would add minimal financial capital to the local and regional economy and would not create an additional demand for housing or businesses that provide goods and services.

### 4.3 AESTHETICS AND VISUAL RESOURCES

#### 4.3.1 Affected Environment

Geographically, the Ogletown Road site is located in an urbanized area of Newark. It is located within three miles of I-95 and is surrounded by numerous commercial and industrial land uses. The general visual character of this area can be described as a medium-density urban industrial park, with several commercial and retail uses in the immediate vicinity and with surrounding areas maintaining relatively low-density residential communities. Residential developments are located less than one half mile to the north and south of the property and include several small neighborhood parks. The topography is visibly flat, at an elevation of 100 feet above sea level, although the terrain slopes gently to the southeast. Vegetation in the vicinity of the proposed project is comprised of open lawns and minimal landscaping at the edges of property lines and along roadways (see Figure 4-3) and more dense stands of mature trees in areas away from major roadways. There are no designated protected viewsheds or historic resources in the vicinity of the site.

**Figure 4-3. Visual Features of the Preferred Site from Two Perspectives**



The site itself is a 20-acre industrial parcel located, approximately 2.4 miles north of I-95, and contains one free-standing, steel building and four storage/outbuildings which are no longer in active use. A small area at the southeastern corner of the site contains several mature trees and shrubs where an abandoned rail spur enters the property.

#### **4.3.2 Environmental Consequences**

Aesthetics and visual resource quality is affected by visible elements including the size and height of key objects, similarity to surroundings, and visual “fit.” In addition, the value of a viewshed is affected by the number and type of viewers and viewer expectations. These visual elements help to determine the potential effects of the Proposed Action on aesthetics and existing visual resources. For example, the introduction of a large multi-story structure into an entirely natural environment could significantly impact visual resources, while the same structure introduced into a developed area might go largely unnoticed by viewers. From an aesthetics perspective, the introduction of a modern cinderblock walled facility with no windows into the center of a campus-like area with all red-brick Georgian style buildings could also have a significant effect.

To evaluate the alternatives, the following criteria have been established to define the level of impacts to visual resources:

***No Effect*** – No impacts to the viewshed of any historic resources and/or the aesthetic character of the installation from the proposed project.

***No Significant Effect*** – No permanent direct or indirect impacts to the existing aesthetic quality of the site and its surroundings would be expected from the proposed project. The project would not substantially degrade the visual character or quality of the site as viewed from off-site vantage points. Any temporary visual disturbances that substantially alter the character of the site would be returned to its original state following the action.

***Significant Effect*** – The Proposed Action would result in a substantial effect on the existing aesthetic quality of the site and its surroundings; substantially alter scenic resources, including but not limited to, trees and historic buildings; or substantially degrade the visual character or quality of the site as viewed from off-site vantage points. The effect would significantly diminish overall integrity, or would significantly alter character defining features of the site.

#### ***4.3.2.1 No Action Alternative***

No new facilities would be built under the No Action alternative; therefore there would be no effect to Aesthetics or Visual Resources.

#### ***4.3.2.2 Preferred Alternative – Ogletown Road***

Under the Preferred Alternative, the AFRC, VMS, and unheated storage building would be constructed on the property located at 1001 Ogletown Road in Newark, DE. The development of the Preferred Alternative site would have an impact on aesthetics if the chosen exterior design were substantially at variance with the design and materials of nearby structures. However, the design of the AFRC building is not expected to conflict with that of the generally industrial development in the vicinity. Despite the relatively large footprint required for the AFRC and ancillary facilities, the proposed facility will be similar in scale to existing land uses in the area. As a result the proposed facility would “fit” visually with surrounding land used. Moreover, given required AT/FP stand-off distances, the AFRC would have no significant aesthetic or visual impacts on public viewpoints from off-site areas.

While site preparation would likely include the demolition of some or all of the standing structures on the property, the AFRC and supporting facilities, once constructed, would not conflict visually with existing and anticipated future surrounding land uses. Existing land uses includes the FMC Biopolymer manufacturing plant to the east and other adjacent commercial and retail facilities. Impacts to site aesthetics would differ slightly based on whether the proposed facilities were constructed on the northern or southern portion of the site. Because more trees would need to be cleared if facilities were placed on the southern portion of the property, impacts to visual resources would be incrementally more substantial if the south side of the site was selected for development. However, given the industrial nature of the site vicinity, the removal of this vegetation would not significantly reduce the visual or aesthetic quality of the site. Moreover, the new installation would introduce an active land use on what is currently 20 acres of underutilized industrial land. The utilization of the property would create a need for regular building and landscape maintenance activities which would prevent the site from falling into disrepair and could potentially serve to enhance the appearance of the site. Moreover, regular activities occurring at the facility would reinforce perceptions of the property as a functional component of the urban landscape, which would add aesthetic value to the site and immediate vicinity. As a result, implementing the Proposed Action under the Preferred Alternative would not have a significant effect upon Aesthetic and Visual Resources.

## 4.4 AIR QUALITY

The U.S. Environmental Protection Agency (U.S. EPA) defines ambient air in 40 CFR Part 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the U.S. EPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the U.S. EPA has issued NAAQS for seven criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particles with a diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), particles with a diameter less than or equal to a nominal 2.5 micrometers (PM<sub>2.5</sub>), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb). Areas that do not meet NAAQS are called non-attainment areas.

### 4.4.1 Affected Environment

New Castle County, DE is part of the Philadelphia-Wilmington-Trenton airshed and has been classified by the U.S. EPA as being in moderate non-attainment for the criteria pollutant ozone, and in non-attainment for the criteria pollutant PM<sub>2.5</sub>.

The state and federal ambient standards for these pollutants are presented in Table 4-2.

**Table 4-2. Ambient Air Quality Standards**

Pollutant	Federal Standard	Delaware Standard
Ozone (O <sub>3</sub> ): 8-Hour Average	0.075 ppm	0.075 ppm
Particulate Matter (PM <sub>2.5</sub> ) <sup>1</sup>		
24-Hour Average	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
Annual Arithmetic Mean	15 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>

Sources: U.S. EPA, 2008c; DNREC, 1999

ppm – parts per million

ug/m<sup>3</sup> – micrograms per cubic meter

To regulate the emission levels resulting from a project, federal actions located in non-attainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93 Determining Conformity of Federal Actions to State or Federal Implementation Plans (the Rule). Section 93.153 of the Rule sets the applicability requirements for projects subject to the Rule through the establishment of *de minimis* levels for annual criteria pollutant emissions. These *de minimis* levels are set according to criteria pollutant non-attainment area designations. Projects below the *de minimis* levels are not subject to the Rule. Those at or above the levels are required to perform a

conformity analysis as established in the Rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operational phases of the action.

The Army has completed a General Conformity Rule applicability analysis to analyze any impact to air quality. Emissions have been estimated for the ozone precursor pollutants NO<sub>x</sub> and volatile organic compounds (VOC). Annual emissions for these compounds were estimated for each of the project actions (construction and operation) to determine if they would be below or above the *de minimis* levels established in the Rule. The *de minimis* values for moderate ozone non-attainment areas in the Ozone Transport Region (OTR) is 100 tons per year (TPY) for NO<sub>x</sub> and 50 TPY for VOC.

On July 11, 2006 the U.S. EPA established *de minimis* levels for PM<sub>2.5</sub>. The final rule established 100 TPY as the *de minimis* emission level under non-attainment for directly emitted PM<sub>2.5</sub> and each of the precursors that form it (SO<sub>2</sub>, NO<sub>x</sub>, VOC, and ammonia). This 100 TPY threshold applies separately to each precursor. This means that if an action's direct or indirect emissions of PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, or ammonia exceed 100 TPY, a General Conformity determination would be required. However, neither the U.S. EPA nor the state of Delaware have found PM<sub>2.5</sub> problems to be caused by VOC or ammonia; therefore, ammonia is not further addressed in this EA (VOC is addressed as an ozone precursor).

Sources of NO<sub>x</sub>, VOC, PM<sub>2.5</sub>, CO, and SO<sub>2</sub> associated with the Proposed Action would include emissions from construction and demolition equipment, fugitive dust (PM<sub>2.5</sub>), painting of interior building surfaces, parking spaces (VOC only), emissions from daily commuters, and emissions from stationary units (boilers and generators).

In addition to evaluating air emissions against *de minimis* levels, emissions were also evaluated for regional significance. A federal action that does not exceed the threshold emission rates of criteria pollutants may still be subject to a general conformity determination if the direct and indirect emissions from the action exceed 10-percent of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this 10-percent threshold, the federal action is considered to be a "regionally significant" activity, and thus, the general conformity rules apply.

#### **4.4.1.1 Ambient Air Quality Conditions**

Ambient air quality is monitored in New Castle County by stations meeting the U.S. EPA's design criteria for State and Local Air Monitoring Stations (SLAMS) and National Air Monitoring Stations (NAMS). There are three ozone and five PM<sub>2.5</sub> monitors within the county. The highest and second highest values recorded at these stations from 2004 through 2008 are presented in Table 4-3.

**Table 4-3. Existing Monitoring Data within New Castle County, DE**

Monitoring Station	Year*				
	2004	2005	2006	2007	2008
#10031007 – Lums Pond State Park O <sub>3</sub> PM <sub>2.5</sub>	0.075/0.072 32.8/31.0	0.105/0.098 36.8/36.3	0.095/0.089 37.2/36.6	0.107/0.086 33.3/32.6	0.094/0.084 32.6/29.7
#100031010 – Brandywine Creek State Park O <sub>3</sub>	0.094/0.085	0.089/0.086	0.093/0.090	0.117/0.088	0.107/0.089
#100031013 – Bellevue State Park O <sub>3</sub>	0.094/0.080	0.088/0.086	0.088/0.084	0.113/0.079	0.099/0.083
#100031003 – River Road State Park PM <sub>2.5</sub>	39.2/36.3	39.0/38.9	38.0/34.9	37.8/33/5	36.3/31.6
#10031012 – Univ. DE North Campus PM <sub>2.5</sub>	38.2/32.5	37.7/37.7	40.3/39.4	35.2/33.0	34.3/31.5
#100032004 – MLK Blvd & Justinson St 1- PM <sub>2.5</sub> 2- PM <sub>2.5</sub>	53.3/44.6 33.5/30.4	47.9/40.5 40.4/39.6	48.2/46.4 41.1/39.5	41.4/41.2 35.2/32.5	39.3/38.1 34.3/28.1

1<sup>st</sup>/2<sup>nd</sup> highest data,

\*Ozone values are in ppm; PM values are in ug/m<sup>3</sup>

NAAQS: O<sub>3</sub>: 8-hour average = 0.075 ppm , PM<sub>2.5</sub>: 24-hour average: 35 ug/m<sup>3</sup>

Source: U.S. EPA, 2008a

#### **4.4.1.2 Meteorology/Climate**

Temperature is a parameter used in calculations of emissions for air quality applicability. The climate in New Castle County, DE varies seasonally. The average summer high temperature in New Castle County, which includes the project site, is 88 degrees Fahrenheit (F) and the average winter low temperature is 23 degrees F (TWC, n.d.).

#### **4.4.1.3 Regional Air Pollutant Emissions Summary**

The U.S. EPA calculates the Air Quality Index (AQI) for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide. The U.S. EPA collects data daily to determine air quality for the region, and releases it in the form of the AQI, which runs from zero to 300, with zero being no air pollution and 300 representing severely unhealthy air pollution levels. An AQI value between 101 and 150 indicates that air quality is unhealthy for sensitive groups who may be subject to negative health effects. Sensitive groups may include those with lung or heart disease who will be negatively affected by lower levels of ground level

ozone and particulate matter than the rest of the general public. An AQI value between 151 and 200 is considered to be unhealthy and may result in negative health effects for the general public, with more severe effects possible for those in sensitive groups. AQI values above 200 are considered to be very unhealthy (Clean Air Partners, n.d.).

Table 4-4 displays the AQI data for New Castle County, DE.

**Table 4-4. AQI Data for New Castle County, DE**

<b>Year</b>	<b>Unhealthy for Sensitive Groups (Days)</b>	<b>Unhealthy for General Public (Days)</b>
2004	9	0
2005	17	2
2006	15	1
2007	17	1
2008	9	1

U.S. EPA, 2008b

#### **4.4.2 Environmental Consequences**

##### ***4.4.2.1 No Action Alternative***

Implementation of the No Action alternative would not change current conditions and therefore there would be no effect on the current air quality conditions in the region.

##### ***4.4.2.2 Preferred Alternative – Ogletown Road***

A General Conformity Applicability Analysis was performed for the Proposed Action. The General Conformity Applicability Analysis estimated the level of potential air emissions (NO<sub>x</sub>, VOC, SO<sub>2</sub>, and PM<sub>2.5</sub>,) for the Proposed Action. Appendix D contains a detailed description of the assumptions and methodology used to estimate the potential emissions for all demolition, construction, and future operational phases of the Proposed Action.

Table 4-5 summarizes the total emissions associated with the demolition, construction and operation phases of the Proposed Action. Construction related emissions would be temporary and only occur during the 24-month construction period for all buildings; however, a conservative approach was initially employed in the applicability analysis to ensure that construction scheduling would not result in

higher levels of emissions than predicted. The analysis first assumed that the construction emissions for all of the buildings would occur concurrently over the same 1-year period.

**Table 4-5. Summary of Annual Emissions**

	<b>Total Annual Emissions – TPY</b>			
	<b>NO<sub>x</sub></b>	<b>VOC</b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>
<b>Federal <i>de minimis</i> standards</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>100</b>
Demolition/Construction	11.492	1.206	5.991	2.366
Full Operation	0.397	0.012	0.017	0.016

The results in Table 4-5 show that the emissions associated with constructing and operating the new AFRC and associated facilities fall well below the *de minimis* levels for all five pollutants when compared to the *de minimis* values for this basic ozone non-attainment area, even under the initial conservative assumptions that were employed. As a result, the Proposed Action is not subject to the General Conformity Rule requirements. Attachment 1 of Appendix D contains a draft Record of Non-Applicability (RONA).

In addition to *de minimis* values, actions are also evaluated for regional significance. An action is considered to be regionally significant if the annual increase in emissions would make up 10 percent or more of the available regional emission inventory. The *Delaware 2005 Rate-of-Progress Plan for Kent and New Castle Counties* sets forth daily emission targets of 34.814 tons per day of VOC and 85.498 tons per day of NO<sub>x</sub> for point and non-road sources in New Castle County, DE (DNREC, 2000). The increase in annual emissions from the construction and operation activities would not make up 10 percent or more of the available regional emission target for VOC or NO<sub>x</sub> and therefore would not be regionally significant.

There is currently no State Implementation Plan (SIP) in place for the newly promulgated PM<sub>2.5</sub> regulations to compare emission levels against, though given the calculated low emission rates of the Proposed Action it is likely that would not make up 10 percent or more of the daily target levels when they are promulgated.

Given the analysis for emissions, implementing the Proposed Action under the Preferred Alternative would not have a significant effect on either the local or regional air quality.

## 4.5 NOISE

Noise is generally defined as unwanted sound. Sound is all around us; it becomes noise when it interferes with normal activities such as speech, concentration, or sleep. Noise associated with military installations is a factor in land use planning both on- and off-base. In particular, noise associated with training operations can be of concern to on-installation personnel and surrounding communities. Noise also emanates from vehicular traffic associated with new facilities and from project sites during construction. Ambient noise (the existing background noise environment) can be generated by a number of noise sources, including mobile sources, such as automobiles, trucks, and trains; and stationary sources such as construction sites, machinery, or industrial operations. In addition, there is an existing and variable level of natural ambient noise from sources such as wind, streams and rivers, wildlife and other sources.

The Noise Control Act of 1972 (42 U.S.C. 4901 to 4918) was enacted to establish noise control standards and to regulate noise emissions from commercial products such as transportation and construction equipment. The Noise Control Act exempts noise from military weapons or equipment designated for combat use.

The standard measurement unit of noise is the decibel (dB), which represents the acoustical energy present. Noise levels are measured in A-weighted decibels (dBA), a logarithmic scale which approaches the sensitivity of the human ear across the frequency spectrum. A 3-dB increase is equivalent to doubling the sound pressure level, but is barely perceptible to the human ear. Table 4-6 presents some familiar sounds and their decibel levels.

**Table 4-6. Familiar Sounds and Their Decibel Levels (dB)**

Sound	Decibel Level (dB)
Whisper	30
Normal Conversation	50-65
Vacuum cleaner at 10 feet	70
Lawnmower	85-90
Train	100
Nearby Jet Takeoff	130

Source: NYCDEP, 2008

Federal and local governments have developed their own standards, which are often used to determine acceptable noise levels for the purpose of protecting individuals from hearing damage. For example, the U.S. EPA has established both indoor and outdoor levels, which aim to protect public health and

welfare by taking into account levels that will prevent hearing damage, sleep disturbance, and communication disruption. An outdoor limit of 55 dB and an indoor limit of 45 dB will protect against speech interference and sleep disturbance for noise sensitive receptors, which include but are not limited to residences, schools, medical facilities, and churches. The Occupational Safety and Health Administration (OSHA) has developed a workplace noise exposure standard of 90 dBA for the duration of an 8-hour period, with a maximum of 140 dBA for impulsive noises.

#### 4.5.1 Affected Environment

On-site sources of noise are negligible in comparison to off-site sources in the vicinity of the Ogletown Road Site. Primary sources of existing noise include traffic from the adjacent 4-lane Ogletown Road located along the northern boundary of the site, and neighboring industrial and commercial land uses in the vicinity of the site. These developments are expected to continue to contribute to noise levels in the vicinity of the proposed site over the lifetime of the facility.

##### 4.5.1.1 Noise from Construction and Demolition

Instances of increased noise are expected during the construction and demolition phases associated with the project. Measures that serve to limit noise during construction and demolition include limiting activity at project sites to daytime hours; limiting truck traffic ingress/egress at access gates to daytime hours; promoting awareness that producing prominent discrete tones and periodic noises (e.g., excessive dump truck gate banging) should be avoided as much as possible; requiring that work crews seek pre-approval for any weekend activities, or activities outside of daytime hours; and employing noise-controlled construction equipment to the maximum extent possible. Typical construction equipment and operation noise levels are presented in Table 4-7.

**Table 4-7. Typical Noise Levels (dBA) of Typical Construction Equipment**

Equipment	Typical Noise Level (dBA) 50 ft from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85

Equipment	Typical Noise Level (dBA) 50 ft from Source
Generator	81
Grader	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Shovel	82
Truck	88

Source: FTA, 2006

As a general rule for estimating noise emission, sound from a stationary source will diminish approximately 5 dBA with each doubling of distance (FTA, 2006). For example, if noise from a source reaches 75 dBA at 50 feet, it will be 70 dBA at 100 feet and 65 dBA at 200 feet, and so on. The State of Delaware Department of Natural Resources and Environmental Control (DNREC) has promulgated noise regulations (State Code Chapter 71, Section 7105) pertaining to construction and operational noise. These regulations prohibit construction that would produce sound levels in any receiving properties in exceedance of 85 dBA for a period of one hour and specify a maximum sound level of 85 dBA for industrial land uses such as manufacturing and transportation facilities and military bases (Section 71-1-6) (DNREC, 2008). Since high levels of noise can affect the health of construction/demolition workers, application of federal OSHA standards for occupational noise exposure associated with construction (29 CFR 1926.52) is also required.

#### ***4.5.1.2 Noise from Facility and Vehicle Operations***

Once facilities are constructed, noise can be generated from facility operations and the vehicles associated with these facilities. Aside from negligible heating, ventilation, and air conditioning (HVAC) related noise, the majority of facilities on military facilities do not generate high levels of noise themselves. Some industrial-related facilities may produce noise, and during power outages, operation of emergency generators could cause minor, short-term noise impacts. Most noise is usually created by vehicles associated with these facilities, including organizational vehicles used for training and operations, government and private delivery vehicles, commuter shuttles or buses, and personal

vehicles used for commuting purposes. The noise impact created by facility and vehicle operations; however, is rarely considered significant.

#### **4.5.2 Environmental Consequences**

The following criteria have been developed to assess noise impacts:

*No Effect* – Natural sounds would prevail; noise generated by construction and operation of the facility would be infrequent or absent, mostly immeasurable.

*No Significant Effect* – Noise levels would exceed natural sounds, as described under no effect, but would not exceed applicable noise standards.

*Significant Effect* – Noise levels would exceed applicable noise standards on a temporary, short-term, or permanent basis or for a prolonged period of time.

##### **4.5.2.1 No Action Alternative**

No new facilities would be constructed under the No Action alternative; therefore, no effects on existing noise levels would be expected.

##### **4.5.2.2 Preferred Alternative – Ogletown Road**

**Noise From Construction and Demolition** – Construction activities would result in temporary and short-duration noise impacts. Site preparation would involve the demolition of some or all of the five buildings, while subsequent construction of the AFRC, VMS, and unheated storage building would involve the use of heavy machinery, including earth moving, materials handling and impact equipment. These activities typically generate noise levels of 85 dBA at 50 feet from the source. The distance from the site boundary to the nearest noise receptor is approximately 400 feet. Given that sound from a stationary source will diminish approximately 5 dBA with each doubling of distance, and assuming conservatively that heavy construction activities would occur at the site boundary, noise levels at the nearest receptor are estimated to reach 50 dBA. Such noise levels would be equivalent to those experienced during normal conversation. At these levels, impacts would not be significant and could be further reduced by employing noise-controlled construction equipment to the extent possible and confining construction activities to normal working hours, between 7:00 a.m. and 6:00 p.m. on weekdays, when existing ambient noise levels in the vicinity of the site are at their highest.

The arrival and staging of heavy equipment and materials would be scheduled to occur during normal work hours to the greatest extent possible to avoid noise disturbances to adjacent properties.

Contractors would be expected to comply with the State of Delaware noise regulations as well as any local ordinances regarding construction noise. Compliance with the OSHA standards for occupational noise exposure associated with construction (29 CFR 1926.52) would address the construction workers hearing protection. As a result, demolition and construction would contribute only minimally to existing noise levels.

**Noise from Facility Operations** - Upon completion of the AFRC construction, day-to-day operations of the AFRC and associated facilities would be expected to remain within normal, ambient levels for the area and are not expected to increase by more than negligible levels over existing noise. Since the area is characterized by industrial and commercial uses which currently generate high noise levels, the minimal noise associated with the AFRC during weekend drill periods would not present a substantial increase over existing noise levels.

On drill weekends there would be some routine vehicle maintenance (e.g. oil changes etc) performed as part of the VMS that would require military vehicles to be started up and moved from the MEP to the VMS. The Army would comply with the local noise ordinances to ensure that neighboring areas are not disturbed. A weapons simulator would also be included in the proposed facilities. The interior rooms housing the simulator would be adequately soundproofed following military regulations and would not produce noise in excess of ambient levels outside of the building. Adhering to military and OSHA regulations would protect personnel during the operation/use of the simulator. There are no schools or other sensitive receptors located in the immediate vicinity of the site. Therefore, no impacts to sensitive receptors would be expected from the project. Overall, noise-related impacts from the proposed AFRC and associated facilities would not be significant.

## **4.6 GEOLOGY AND SOILS**

### **4.6.1 Affected Environment**

Geological resources consist of all bedrock and soil materials within an area. Geologic factors such as soil stability and seismic properties influence the stability of structures. Soil, in general, refers to unconsolidated earthen materials overlying bedrock and other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodability all determine the ability for the ground to support structures and facilities. Soils typically are described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use. Topography consists of the physiographic, or surface, features of an area and is

usually described with respect to elevation, slope, aspect, and landforms. Long-term geological, erosional, and depositional processes typically influence topographic relief of an area.

#### ***4.6.1.1 Geologic and Topographic Conditions***

The Ogletown Road site is situated within the Coastal Plain Physiographic Province of Delaware/Maryland/DC, which is characterized by gently rolling hills and valleys, and is underlain by a southeasterly thickening sequence of sediments that consist of sand and gravel aquifers interlayered with silt and clay confining units (Nova, 2007). The topography of the site and vicinity is visibly flat, at an elevation of 100 feet above sea level, although the terrain slopes gently to the southeast. The site contains approximately 20 acres of land that is entirely developed with buildings, paving, and landscaped areas.

Based on a review of bedrock geological mapping prepared by the Delaware Geological Survey, the property is underlain by the Potomac Formation, which consists primarily of layers of red and gray silts and clays, with beds of quartz sand.

#### ***4.6.1.2 Soils***

Based on review of the New Castle County Soil Survey (Nova, 2007), which is the most recent data available for the area, soil at the proposed project site is classified as Delanco Silt Loam, slope range from 0 to 8 percent. The Delanco Silt Loam soil is described as very deep, moderately well drained, occurring on terraces and in the heads of drainage ways.

#### ***4.6.1.3 Prime Farmland***

The Farmland Protection Policy Act was passed in order to minimize the amount of land irreversibly converted from farmland due to Federal actions. Prime farmland, as defined by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas (NRCS, 2008). No areas in the vicinity of the Ogletown Road site qualify as prime farmland.

### **4.6.2 Environmental Consequences**

To assess the magnitude of impacts to geology, topography, and soils in the area of the proposed project site, the following impact thresholds were used.

**No Effect** - Geology, topography, or soils would not be impacted or the impact to these resources would be below or at the lower levels of detection. Any impacts would be slight.

**No Significant Effect** - Impacts to geology, topography, or soils would be detectable. Impacts to undisturbed areas would be proportionally small to the site.

**Significant Effect** - Impacts on geology, topography, or soils would be readily apparent and result in a change to the character of the resource over a relatively wide area. Mitigation measures would be necessary to offset adverse impacts and may or may not be successful.

#### **4.6.2.1 No Action Alternative**

No impacts would be expected. Implementation of the No Action alternative would not alter the existing soils or geologic conditions at the site being considered under the Proposed Action.

#### **4.6.2.2 Preferred Alternative – Ogletown Road**

**Geologic and Topographic Conditions** – No significant adverse impacts to geologic or topographic conditions would be expected. The site is relatively flat and has been developed; thus, construction of new facilities would not require large amounts of leveling, grading, excavation, and compaction of soils. Considerable alterations of the general topographic character of the site would not occur.

**Soils** – No significant adverse impacts to soils would be expected. Soils found within the footprint of the proposed new construction would likely have previously been affected by activities associated with construction of the existing facilities on the site. Impacts to soils would differ slightly based on whether the facilities were constructed on the northern or southern portion of the site. Because more vegetation would need to be cleared in the southern portion of the property, the soil layer structure would be more directly disturbed and modified if facilities were placed on this portion of the property. However, these impacts would not be considered significant given that the majority of soils at the site have been previously disturbed or modified. Disturbed areas outside of the building and parking area footprints would be reseeded following construction activities, to minimize potential erosion. Soil erosion and sediment production would be minimized for all construction operations as a result of following an approved sediment and erosion control plan. The preferred site would be revegetated (as necessary) following construction activities. Soil erosion and sediment control measures would be included in site plans to minimize long term erosion and sediment production.

**Prime Farmland** – No impacts to prime farmlands would be expected. The Preferred Alternative site is located within a built-up urban setting and contains soils that have been heavily modified. None of the lands in the vicinity of the site are classified as prime farmlands.

## **4.7 WATER RESOURCES**

### **4.7.1 Affected Environment**

#### ***4.7.1.1 Surface Water***

No natural surface water bodies (ponds or streams) exist on the Ogletown Road site. The Phase I Environmental Site Assessment (ESA) of the Ogletown Road site reported that there were no settling ponds, lagoons, surface impoundments, wetlands, or natural catchbasins found in the vicinity (Nova, 2007).

The closest surface water in the vicinity of the site is White Clay Creek, which is located 0.4 miles north of the site. In Delaware's "2008 Combined Watershed Assessment Report (305(b)) and Determination for the Clean Water Act Section 303(d) List of Water Needing TMDLs", White Clay Creek was listed as Category 5 water for polychlorinated biphenyls (PCBs) and habitat and biology. Category 5 waters require the development of a Total Maximum Daily Load (TMDL) to address the pollutant of concern. The PCBs listing for White Clay Creek was made in 1996 and again in 2006. The target date for completing the TMDL addressing the PCBs impairment is 2009. The biology and habitat listing was made in 1998 and the target date for TMDL completion is 2009.

The site contains two stormwater drainage ditches, one each along the eastern and southern portions of the property, which discharge to an unnamed tributary of the White Clay Creek. These stormwater drainage ditches are small intermittent streams and traverse the site in a north-south and east-west orientation.

**Wetlands** – Based on Phase I ESA, the National Wetland inventory and a site visit conducted by the Regulatory Division of the USACE Philadelphia District, there are no wetlands on the preferred site (Nova, 2007 and Brundage, 2008).

#### ***4.7.1.2 Hydrogeology/Groundwater***

The Ogletown Road site is underlain by the Potomac Aquifer, a major source of groundwater for wells in New Castle County. The depth to the water table was estimated at about 30 feet below grade. According to DNREC personnel, groundwater flow at the site would be a low gradient and vary

considerably on a seasonal basis. No water wells or springs are known to exist on the site (Nova, 2007). In addition, the preferred site does not overlie an aquifer designated by the U.S. EPA as a Sole Source Aquifer (SSA) (Nova, 2007).

In the 2007 Phase I Environmental Assessment (Nova, 2007) conducted for the site, it was noted that there was a leaking underground storage tank associated with a Shell Service Station located 400 feet from the preferred site. Topographically, the Shell Service Station is located upgradient of the preferred site. DNREC found contamination of soil and groundwater at the Shell facility with petroleum compounds at concentrations above State remediation standards. Based on subsequent groundwater sampling, DNREC found that the petroleum compounds on the property east of the Shell facility (the property between the Shell facility and the preferred site) were at concentrations below remediation standards. Based on these measurements, DNREC considers it unlikely that the release has affected the environmental conditions at the preferred site (Nova, 2007).

#### **4.7.1.3 Floodplains**

Based on Flood Insurance Rate Maps (FIRM) created by the Federal Emergency Management Agency (FEMA), the Ogletown Road site is located within Flood Zone X, which is outside the 100- and 500-year floodplain (Nova, 2007).

#### **4.7.1.4 Coastal Zone**

According to the DNREC the Ogletown Road site is not located in the coastal zone (DNREC, 2008).

### **4.7.2 Environmental Consequences**

An assessment of impacts to water resources was conducted and the following thresholds are used to describe the level of magnitude of these effects:

**No Effect** – Current water quality and hydrologic conditions would not be altered or conditions do not exist for impacts to occur.

**No Significant Effect** – Impacts (chemical, physical, or biological effects) would be either not detectable, or detectable, but at or below water quality standards or criteria. Alterations in water quality and hydrologic conditions relative to historical baseline may occur, however, only on a localized and short-term basis.

**Significant Effect** – Impacts (chemical, physical, or biological effects) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions;

and/or chemical, physical, or biological water quality standards or criteria would be locally, slightly and singularly, exceeded on either a short-term or prolonged basis.

#### **4.7.2.1 No Action Alternative**

Under the No Action alternative, there would be no effect on area water resources.

#### **4.7.2.2 Preferred Alternative – Ogletown Road**

**Surface Water** – Under the Preferred Alternative, no significant effects on surface waters would be expected. There is potential for increased waterborne pollutants (e.g. dissolved solids, sediment, petroleum hydrocarbons) resulting from demolition and construction activities that could be transported to the two stormwater drainage ditches.

All of the construction, including demolition, for the Proposed Action would fall under the permitting and regulatory requirements of the Delaware Sediment and Stormwater Regulations. Prior to construction, a Sediment and Stormwater Plan would be required because more than 5,000 square feet will be disturbed. The Sediment and Stormwater Plan must contain the supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which stormwater runoff will be managed for the site (DNREC, 2006). All proposed stormwater management practices must be accomplished according to the Delaware Erosion and Sediment Control Handbook. In addition to the Sediment and Stormwater Plan, a NOI for Stormwater Discharges Associated Construction Activity under a National Pollutant Discharge Elimination System (NPDES) General Permit would have to be submitted to the Division of Soil and Water Conservation of the DNREC along with an application fee. Generally, the NOI is submitted to DNREC prior to the approval of the Sediment and Stormwater Plan. Part of any Sediment and Stormwater Plan would likely include best management practices (BMPs) during site preparation, earthworks and construction activities at the site. BMPs would ensure that stormwater runoff would not cause or exacerbate erosion and potentially impact area waters. Potential BMPs may include installation of silt fences, coverage of soil piles with mulch, installation of hay bales, and maintaining exposed surface soils in a damp state.

The preferred site is currently developed so the construction of the new AFRC facilities may not increase the amount of impervious surface on-site. However, stormwater runoff would still be produced by the newly constructed facilities. While specific stormwater management measures for the Proposed Action have not yet been designed, all stormwater generated on-site from the proposed facilities would be treated for both quality and quantity on-site, and any stormwater discharged off-site via the stormwater drainage ditches would meet all state and local regulatory and permit requirements

as specified in Section 9 of Delaware's Regulations Governing the Control of Water Pollution. The Surface Water Discharges Section, Division of Water Resources of the DNREC is responsible for administering the permits.

Potential solutions for treating stormwater quality and quantity include installing oil-water separators (OWS) and constructing detention pond(s) on-site to collect runoff from impervious surfaces with over flow discharging to drainage ditches. Final calculations for the amount of stormwater expected to be generated by the new facilities and how that stormwater would be adequately managed for both quality and quantity to meet all state and local regulatory and permit requirements will be finalized during the facility design process. As part of the Proposed Action, it is also likely that the stormwater drainage ditches on-site would be improved to facilitate natural drainage of the site.

Depending on the final design of the proposed facilities, a Conditional "No Exposure" Exclusion could be granted and the facility would not need to monitor or develop a Stormwater Plan. "No Exposure" is defined as a condition where all industrial materials and activities are protected by storm resistant shelters or other equivalent measures so that they are not exposed to rain, snow, snowmelt, or runoff (§9.1.01.1). A Conditional "No Exposure" Exclusion is a state requirement and is granted upon approval of a "No Exposure" Certification Form.

The implementation of BMPs and the Sediment and Stormwater Plan would ensure that any potential impacts from stormwater would be minimized.

The VMS conducts routine vehicle maintenance operations (e.g. oil changes etc.) so the potential for fuel and lubricant spills at the proposed facilities suggests that there may be minor effects associated with the operation of the new AFRC. The proposed VMS design would include floor drains that convey flow through oil-water separators prior to discharging to either the sanitary sewer system or stormwater management facilities, thus minimizing impacts on water resources.

**Wetlands** - No effects on wetlands would be expected because there are no wetlands in the vicinity of the property.

**Hydrogeology/Groundwater** - No significant effects would be expected. Leaks from vehicles and vehicle maintenance operations could potentially impact groundwater resources. The VMS, MEP, and other parking areas would be paved. This would make it easier to detect any spills or leaks and prevent the infiltration of contaminants that could potentially impact groundwater sources. Strict adherence to safety procedures for vehicle maintenance and the operation of equipment and on-site clean-up

procedures would minimize the potential for spills and leaks. In addition, vehicle operations and maintenance performed at the VMS only involves small amounts of fuels, oils, and lubricants, reducing the likelihood of large spills that could migrate onto pervious areas of the site and potentially impact groundwater.

These measures would ensure that any potential effects would likely be either not detectable or detectable at or below state water quality standards/criteria and have no significant effects.

**Floodplains** – The Ogletown Road site is located outside of the 100-year floodplain; therefore, no effects would be expected.

**Coastal Zone** – The Ogletown Road site is located outside of the coastal zone; therefore, no effects would be expected.

## **4.8 BIOLOGICAL RESOURCES**

### **4.8.1 Affected Environment**

The preferred site located in Newark, DE, is a densely developed urban environment with much of its ecosystem highly altered due to extensive human activities. Much of the native vegetation on-site has been destroyed or displaced by species that are more tolerant to disturbances. Limited wildlife habitat is present on the site.

#### **4.8.1.1 Vegetation**

The preferred site consists of approximately 20 acres of developed, industrial land. The flat site contains a free-standing, one-story steel warehouse building. The majority of the site is covered with mowed lawn, with several landscape trees (including pines [*Pinus* sp.] and oaks [*Quercus* sp.]) around the perimeter of the warehouse building. The southern and eastern portion of the property consists of scrub vegetation with scattered maple (*Acer* sp.) and oak trees along the property boundary. The understory vegetation also consists of Japanese honeysuckle (*Lonicera japonica*), multi-flora rose (*Rosa multiflora*), greenbrier (*Smilax*), grape (*Vitis*) and holly (*Ilex* sp.). These habitats are associated with the two drainage ditches that exist on the property.

#### **4.8.1.2 Wildlife**

The preferred site has not had a comprehensive inventory of wildlife resources. During a site visit on 18 November 2008, no wildlife species were observed. However, wildlife species occurring on the site would be typical of those that inhabit or migrate through the Mid-Atlantic Region. Wildlife found at

the Preferred Site would likely consist of species that typically inhabit developed areas with scrub/shrub habitat or open areas with mowed lawn, utilize small areas with scattered trees, and are tolerant to human disturbance. Wildlife species expected to occur include grey squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), eastern chipmunk (*Tamias striatus*), and European starling (*Sturnus vulgaris*).

#### **4.8.1.3 Threatened, Endangered, and Sensitive Species**

The U.S. Fish and Wildlife Service (USFWS) has responsibility for the listing of threatened and endangered species, and they make determinations as to whether formal Section 7 consultations under the ESA are necessary in regards to the Proposed Action.

The altered environment of the preferred site provides little high-quality habitat for species of plants and wildlife and it is not known to support any Federal- or Delaware State-listed rare, threatened, or endangered species of plants or animals.

#### **4.8.2 Environmental Consequences**

The following thresholds were used to determine the magnitude of effects on wildlife and wildlife habitat and vegetation, with separate criteria being used to evaluate impacts to threatened and endangered species:

**No Effect** – No impacts to native species, their habitats, or the natural processes sustaining them would occur, or such conditions do not exist for impacts to occur.

**No Significant Effect** – Impacts would be detectable, but would not be expected to be outside the natural range of variability and would not have any long-term effects on native species, their habitats, or the natural processes sustaining them. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, or other factors affecting population levels. Sufficient habitat would remain functional to maintain viability of all species.

**Significant Effect** – Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or be permanent. Population numbers, population structure, genetic variability, and other demographic factors for species might have large, short-term declines, with long-term population numbers significantly depressed. Frequent responses to disturbance by some individuals would be expected, with negative impacts to feeding,

reproduction, or other factors resulting in a long-term decrease in population levels. Loss of habitat might affect the viability of at least some native species.

Impacts to threatened and endangered species were classified using the following terminology, as defined under the ESA:

***No effect*** – The proposed action would not affect a listed species or designated critical habitat OR listed species or designated critical habitat are not present.

***May affect / not likely to adversely affect*** – Effects on special status species are discountable (i.e., extremely unlikely to occur and not able to be meaningfully measured, detected, or evaluated) or completely beneficial.

***May affect / likely to adversely affect*** – When an adverse effect to a listed species may occur as a direct or indirect result of proposed actions and the effect is either not discountable or completely beneficial.

***Likely to jeopardize proposed species/adversely modify proposed critical habitat*** – The appropriate conclusion when the Army identifies situations in which actions could jeopardize the continued existence of a proposed species or adversely modify critical habitat to a species within and/or outside of the project site boundaries.

#### ***4.8.2.1 No Action Alternative***

Under the No Action alternative, the proposed AFRC facilities would not be constructed; therefore, no impacts to biological resources would occur.

#### ***4.8.2.2 Preferred Alternative – Ogletown Road***

***Vegetation*** – No significant adverse effects would be expected as a result of implementing the Proposed Action under the Preferred Alternative. Vegetation on site is minimal, consisting mostly of several landscape trees around the warehouse building, open areas with mowed lawn, and scrub/shrub vegetation with a few, scattered, low-quality trees along the rear portion of the property. Demolition of the existing building and construction and operation of the proposed new AFRC facilities would disturb areas with existing mowed lawn and could require the removal of the landscape trees around the warehouse building and the low quality scrub/shrub vegetation in the rear (south side) of the property. If construction of the new facilities takes place on the southern portion of the property slightly more vegetation would likely have to be removed than if the facilities were built on the northern portion

(towards Ogletown Road) of the property. However, the impacts would not be incrementally worse, for the vegetation is of low quality habitat to begin with. New landscape vegetation would be planted around the new AFRC facility once construction is complete.

**Wildlife** – No significant adverse effects would be expected as a result of implementing the Proposed Action under the Preferred Alternative. Some species, particularly birds, would be temporarily discouraged from the area through destruction of habitat, noise, and/or dust. Diversity of wildlife on-site is limited and species that utilize this area have adapted to living in conditions in habitats altered by humans.

**Threatened, Endangered, and Sensitive Species** – No federal- or state-listed threatened or endangered species are known to occur at the Preferred Site and the Proposed Action is expected to have no adverse impacts on any listed Federal or state listed species.

As part of this EA, the 99<sup>th</sup> RSC initiated consultation with the USFWS and DNREC seeking confirmation that implementation of the Proposed Action at the preferred site would not adversely impact any federal- or state-listed species. Initial consultation letters were sent to the USFWS and DNREC on January 20, 2009 and are included in Appendix B. Appendix B will include responding correspondence from the USFWS and DNREC when it has been received.

#### **4.9 CULTURAL RESOURCES**

This section assesses impacts on buildings, sites, structures, districts, and objects eligible for, or included in, the National Register of Historic Places (NRHP); National Historic Landmarks (NHL); archaeological resources as defined by the Archaeological Resources Protection Act of 1979; and Native American sacred sites for which access is protected under Executive Order 13007 (1996) and the American Indian Religious Freedom Act (AIRFA) of 1978. These resources include ethnographic resources, or traditional cultural properties, which are defined as significant because of their “association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community” (National Park Service, National Register Bulletin 38).

This section is based on research at the Delaware State Historic Preservation Office in Dover and other sources, including the National Park Service online listing of NHL and NRHP properties. It also includes the result of a field survey and Native American consultation conducted as part of NEPA compliance activities for this project.

#### **4.9.1 Affected Environment**

The ROI is equivalent to the Area of Potential Effects (APE) under Section 106 of the National Historic Preservation Act (36 CFR 800.16[d]). It is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The cultural resources ROI considered for this project includes the area immediately surrounding the proposed AFRC complex site, taking into consideration the built environment within the viewshed of the proposed undertaking.

The preferred site is a complex of four industrial buildings constructed in 1965, including: the former Temple Inland Newark Box Plant box plant building; a warehouse; an electrical pump house; and a water pump house. The complex also includes a prefabricated building dating from approximately 1985. An inactive railroad spur runs from the southeastern portion of the receiving site parcel to the south, linking with Amtrak/Conrail lines.

The complex sits on approximately 20-acres in a predominately industrial and commercial area. A large lumber store and yard is located north of the receiving site across S.R. 273. The parcels west of the receiving site are currently used for automobile sales, and the parcel to the east is a late twentieth-century manufacturing facility.

##### ***4.9.1.1 Prehistoric and Historic Background***

Human occupation of the Newark area began approximately 12,000 years ago at the end of the last Ice Age. The earliest occupants of northern Delaware were semi-nomadic, with a focus on hunting and exploiting of sources of high-quality stone for the manufacturing of tools. Iron Hill, a source of stone significant in prehistory, is located approximately four miles southwest of the ROI. Indian inhabitants of the Newark area began intensive fishing and harvesting of shellfish approximately 5000 years ago, concomitant with dramatic population growth and an elaboration of material culture. Indian groups began practicing agriculture approximately 1000 years ago, bringing about further population growth and cultural elaborations. For much of the pre-Colonial epoch, White Clay Creek was a focus of life in the area; there are many documented sites located along its banks. The receiving site would have been marginal land throughout the span of prehistory, being located away from rich resource deposits and away from the major creeks. Any Indian use of the land would likely have been for short-term hunting forays.

For European settlers the area was a rural hinterland in the late seventeenth century and early eighteenth century. Settlement densities rose in the late seventeenth century, as small towns were established along

waterways and along a burgeoning network of roadways. Scotch-Irish immigrants settled in the area beginning in 1694. The town of Newark was officially chartered in 1758. Ogletown Road (SR 273) was one of the earliest roadways in the area, connecting Newark to Christiana. The hamlet of Ogletown, named after a large landowner of the area, Thomas Ogle, was established at some point in the early eighteenth century (Scharf, 1888). Given the proximity to the historic road, the receiving site may have been first settled during this period (the late seventeenth and early eighteenth century). While there is no documentation of houses within or adjacent to the receiving site, it was likely either cleared and put to agricultural use, or periodically harvested for wood.

There was rapid industrial and urban growth in northern Delaware during the late eighteenth and early-to-middle nineteenth centuries. The growth was tied to larger patterns of immigration to America and tied to rapid developments in transportation networks. Turnpikes, canals, and railroads swept through northern Delaware during the nineteenth century and changed the physical and cultural landscape. The main road in Newark, just west of the receiving site, was organized as a turnpike in 1811 (Scharf, 1888). Running south and east of the receiving site, the Philadelphia, Wilmington and Baltimore Railroad was chartered in 1831 and opened between 1836 and 1837. It was part of the Pennsylvania Railroad's mainline running between Baltimore and Philadelphia. Many houses were constructed along Ogletown Road in this period, with some erected east and west of the receiving site. The area became more residential and urban. While there is no documentation about activities at the property, the receiving site likely continued to be either farmland or a woodlot through this period.

The Newark area had increasing industrial production in the late nineteenth and twentieth centuries. Paper production became a major part of the city's economy, and a variety of other mills, including woolen mills and machine shops were constructed in area (Scharf, 1888; Conrad, 1908). The area surrounding the receiving site underwent many changes in this period, eventually becoming a largely industrial and commercial area. The Baltimore & Ohio railroad was constructed north of the Ogletown Road in late nineteenth century, fuelling development. The project vicinity briefly became known as Lumbrook. In 1882, a horse race track opened west of Marrows Road, known as the Homewood Trotting Park, or Homewood Park. The park did not dramatically change the mixed residential and industrial make-up of the community along Ogletown Road. Based on aerial imagery, the receiving site was farmland in 1937, 1954, and 1961. The construction of the box plant in 1965 is the only documented development or non-farm use of the receiving site.

#### ***4.9.1.2 Status of Cultural Resource Inventories and Section 106 Consultations***

The preferred site has not been previously inventoried for built resources (buildings, sites, structures, districts, or objects) or archaeological resources and there has been no prior Section 106 consultation regarding the site.

An architectural survey was conducted along Ogletown Road in 1995 and included the ROI for the preferred site, but due to the recent date of construction of the Temple Inland Newark Box Plant complex (1965), this survey did not include the box plant property (Abbott, 1995). The survey did inventory properties adjacent to the box plant to the west: 705 and 709 Ogletown Road. Both properties are residential properties constructed between 1880 and 1940, and they were determined not eligible for listing in the NRHP. The NRHP-listed James Morrow House (NR listed 8/21/83) is located outside of the ROI for the AFRC project, being approximately 800 feet east/northeast of the preferred site.

The landscape and buildings of the preferred site do not meet the NRHP requirement of being 50 years of age or more. In addition, the landscape and buildings do not possess significance in regards to historic events, architecture, or important persons to warrant NRHP eligibility under *Criteria Consideration G: Properties that Have Achieved Significance Within the Past Fifty Years*. There are no National Historic Landmarks, NRHP-listed, or NRHP-eligible built resources (buildings, sites, structures, districts, or objects) within the ROI for the preferred site.

The preferred site was surveyed for archaeological resources in November 2008, as part of the compliance review for the BRAC activities. This survey identified no archaeological sites within the entire 20-acre parcel. In accordance with Delaware SHPO guidelines, an Archaeological Survey Report Form was prepared presenting the negative findings from the survey (Katz and Kraus, 2008).

In accordance with Section 106 of the NHPA the Delaware State Historic Preservation Office (DESHPO) was contacted via letter dated January 9, 2009 seeking confirmation that the Proposed Action would not significantly impact any cultural resources. The Archaeological Survey Report Form was enclosed with the letter. By letter dated January 16, 2009 the DESHPO concurred that the Proposed Action would have no adverse affects on any properties in or eligible for inclusion in the NRHP. See Appendix B for all correspondence.

#### ***4.9.1.3 Native American Resources and Traditional Cultural Properties***

To date, no traditional cultural properties (TCPs) or Native American sacred sites have been recorded at the receiving site. The receiving site has an undistinguished history and is not associated with cultural

practices or beliefs of living ethnographic communities that post-date Anglo-European settlement. On January 9, 2009 initial coordination letters describing the Proposed Action were sent to the Delaware Nation and the Stockbridge-Munsee Tribe; neither group is resident in Delaware, but both have expressed an interest in Delaware and may be knowledgeable about Native American sacred sites or TCPs in the ROI. The Archaeological Survey Report From was included with the letters. By letter dated January 13, 2009 the Stockbridge-Munsee Tribal Historic Preservation Office indicated that the preferred site is not in an area of archaeological interest to the tribe. See Appendix B for all correspondence. Coordination with the Delaware Nation is ongoing and will be completed prior to the beginning of construction activities.

#### **4.9.2 Environmental Consequences**

Potential impacts to cultural resources have been evaluated based on the extent of resources that are eligible for or listed on the NRHP in the area. This analysis parallels the procedures for determining the effects of a Federal undertaking upon historic properties under 36 CFR 800, the implementing regulation for Section 106 of the NHPA.

For the preferred alternative in the EA, an assessment has been made of what NRHP resources, if any, are within its potential area of impact and the reasonably foreseeable nature and extent of any impact.

The following provides an explanation of the characterization of impacts to cultural resources as “no effect, not significant, and significant” in comparison with the terminology of “no effect, no adverse effect, and adverse effect” used in 36 CFR 800.

#### **Section 106 Scale**

Per 36 CFR 800.11 (i) *effect* means alteration to the characteristics of a historic property that qualify it for inclusion or eligibility for the National Register. Per 36 CFR 800.5 (a) (1), the effect becomes *adverse* when “an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.” Examples of adverse effects include: the physical destruction of all or part of the historic property; an alteration of the property that is not consistent with the Secretary of Interior’s Standards for the Treatment of Historic Properties (36 CFR 68); the removal of the property from its historic setting; changing the character of the property’s use or of the physical features of its setting that contribute to its significance; and the introduction of visual, aural, and atmospheric elements that diminish the integrity of the property’s significant historic features.

## **Environmental Impacts to Cultural Resources vs. the Section 106 Scale**

*No effect* – This equates to *no effect* for Section 106.

*No Significant Effect* – An impact that alters or has the potential to alter the historic characteristics or setting of an NRHP property but does not diminish its integrity. This equates to *no adverse effect* for Section 106.

*Significant Effect* – An impact that diminishes or destroys the integrity of an NRHP property. This equates to *adverse effect* for Section 106.

In the practice of Section 106 consultation, adverse effects can often, but not always, be mitigated, when the loss of integrity of the NRHP resource is justified, balanced against other competing interests. The results of the consultation process are usually memorialized in a Section 106 Memorandum of Agreement containing mitigation stipulations. Neither the initial identification of a significant impact to cultural resources or a determination of adverse effect under Section 106 necessarily precludes a FNSI under NEPA. The loss of NRHP cultural resources would have to be major in scale and importance and without any acceptable feasible mitigation measures to negate a FNSI.

### **4.9.2.1 No Action Alternative**

Under the No Action alternative the Army would not acquire any property and no new facilities would be built. Therefore, there would be no effects on cultural resources.

### **4.9.2.2 Preferred Alternative – Ogletown Road**

Under the Preferred Alternative the proposed AFRC facilities would be constructed at a location where there are no archaeological resources, ethnographic resources, Indian sacred sites, or historic buildings, sites, structures, districts, or objects. Therefore, the Preferred Alternative would have no impacts on cultural resources.

## **4.10 SOCIOECONOMICS**

The Affected Environment and Environmental Consequences sections of the Socioeconomics resource area of this EA are presented in limited detail. This is due to the fact that none of the personnel relocating to the proposed AFRC would be coming from outside the ROI. Because there would be no change in the baseline population two resources, *Housing* and *Quality of Life*, which are normally addressed in Socioeconomics, are not evaluated in this EA.

#### **4.10.1 Affected Environment**

The socioeconomic ROI for AFRC Newark is New Castle County, DE. This county comprises the area in which the predominant socioeconomic effects of the Proposed Action would take place. The geographical extent of the ROI is based on the location of businesses that would provide goods and services to the new facilities and its employees.

The baseline year for the socioeconomic analysis is 2007, and though the analysis tries to reflect the most current conditions much of the economic and demographic data for the ROI are only available through the years 2005 and 2006. The description of the affected environment is based on the most recent data available to accurately reflect the current economic and social conditions of the ROI. Due to the fact all of the personnel relocating to the proposed AFRC would be coming from within the ROI only a brief overview of the regional economic activity and demographic data and trends is presented.

##### ***4.10.1.1 Economic Development***

###### *4.10.1.1.1 Regional Economic Activity*

The ROI's regional economy is composed of non-farm industries such as manufacturing, retail, professional and technical services, health care and social services, finance and insurance, construction, and accommodation and food services. These sectors account for virtually 100 percent of jobs in the ROI. No single sector dominates the economy; however, five sectors account for approximately 52 percent or 185,535 jobs out of the total of 358,190 jobs in the ROI: finance and insurance 39,238 jobs (11 percent); retail trade 39,103 jobs (10.9 percent); government and government enterprises 38,345 jobs (10.7 percent); healthcare and social assistance 37,983 (10.6 percent); and professional, technical services 30,866 jobs (8.6 percent) (Stats Indiana, 2006). At one-tenth of one percent farm jobs in the ROI are practically non-existent.

In 2007 the unemployment rate for the ROI was 3.4 percent which was below the national unemployment rate of 4.6 percent during the same period. The ROI and the state of Delaware's unemployment rate were the same at 3.4 percent. The ROI's annual unemployment rate has decreased by 17.1 percent over the past five years (Stats Indiana, 2007a and 2007b).

##### ***4.10.1.2 Demographics***

The ROI's population was 528,218 inhabitants in 2007. On average, since 1980, the ROI has experienced a growth rate of 9.1 percent (Stats Indiana, 2007d). Population data for the ROI, Delaware, and the U.S. overall are provided in Table 4-8 for comparison purposes.

**Table 4-8. Population Trends, 1980 - 2007**

<b>Location</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2007</b>
New Castle County (ROI)	398,115	441,946	500,265	528,218
Delaware	594,338	666,168	783,600	864,764
United States	226,542,250	248,790,925	281,421,906	301,621,157

Source: Stats Indiana, 2007c and 2007d

#### ***4.10.1.3 Environmental Justice***

On February 11, 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The EO is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from proposed actions and to identify alternatives that might mitigate these impacts. Data from the U.S Department of Commerce 2000 Census of Population and Housing were used for this environmental justice analysis. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, Hispanic, of two or more races, and other. Poverty status, used in this EA to define low-income status, is reported as the number of persons with income below the poverty level. The 2000 Census defines the poverty level as \$8,794 of annual income, or less, for an individual, and \$17,603 of annual income, or less, for a family of four.

In 2005, the median household income was \$59,054 for New Castle County residents compared to \$52,508 for the state of Delaware. The average poverty rate for the ROI in 2005 was 9.9 percent, which was lower than the national poverty rate of 13.3 percent, and the Delaware state-wide poverty rate of 10.3 percent. In 2007, the ROI's population consisted of the following ethnic groups: 72.1 percent white, 23.0 percent black, and 7.2 percent Hispanic. Note that these figures do not add to exactly 100 percent because Hispanics may be counted as white, black, and/or Hispanic by the U.S. Census Bureau, and hence there is a level of "double-classification". The elderly (65 plus) accounted for 11.6 percent of the ROI's population and the median age in the county is 36.9 (Stats Indiana, 2007c, 2005a and 2005b).

#### ***4.10.1.4 Protection of Children***

On April 21, 1997, President Clinton issued Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This Executive Order directs each federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children

that result from environmental health risks or safety risks. EO 13045 recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health and safety risks. These risks arise because children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, President Clinton has directed each federal agency to (1) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children, and (2) ensure that the agency's policies, programs, and standards address disproportionate health risks to children that result from environmental health risks or safety risks. Examples of risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants children might come into contact with or ingest. Actions or alternatives indicating potential disproportionate risks to children will be identified and addressed in Section 4.10.2.1 and 4.10.2.2.4 of this EA.

#### **4.10.2 Environmental Consequences**

The economic effects of implementing the Proposed Action are estimated using the Economic Impact Forecast System (EIFS) model, a computer-based economic tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in spending and employment associated with the renovation of housing represent the direct effects of the action. Based on the input data and calculated multipliers, the model estimates changes in sales volume, income, employment, and population in the ROI, accounting for the direct and indirect effects of the action.

For purposes of this analysis, a change is considered significant if it falls outside the historical range of ROI economic variation. To determine the historical range of economic variation, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, income, employment, and population patterns. The historical extremes for the ROI become the thresholds of significance (i.e., the RTVs) for social and economic change. If the estimated effect of an action falls above the positive RTV or below the negative RTV, the effect is considered to be significant. Appendix C discusses this methodology in more detail.

#### ***4.10.2.1 No Action Alternative***

No direct or indirect effects would be expected. Under the No Action alternative, the military population and expenditures would remain unchanged from baseline levels and no new construction would take place. Therefore, economic activity levels and ROI population growth would be the same as under the baseline conditions. In addition, there would be no disproportionately high and adverse impacts to minority or low income populations. Furthermore, no adverse impacts on children as related to EO 13045 would occur.

#### ***4.10.2.2 Preferred Alternative – Ogletown Road***

##### *4.10.2.2.1 Economic Development*

Minor direct and indirect beneficial effects would be expected under the Proposed Action.

The total number of personnel relocating to the proposed AFRC would be 401, of which 379 are reservists, and 23 of whom are full-time personnel. It is assumed that all of the 401 personnel are currently living within the ROI, including the 120 associated with the DEARNG units who are coming from Middletown, DE 15 miles outside of Newark. Therefore, there would be no new incoming personnel to the ROI.

Construction expenditures on goods and services, equipment, and salaries under the Proposed Action are expected to be the major contributor to increased sales and employment, due to the associated increase in expenditures on labor and materials during the construction period, although this would be of a short-term nature. These effects are assessed to be minor direct and indirect beneficial effects of the Proposed Action. The estimated start date for construction is April 2009 with an estimated completion date of February 2011. The EIFS was run for a 12 month period instead of the full 23 month period because it is assumed that the majority of impacts from expenditures, \$25,649,000 for land acquisition and construction activities, will be greatest within the first 12 months of construction. As a consequence, the results of the EIFS model are higher than if activity had been modeled out across the entire 23 months of the project.

The Proposed Action would generate an estimated 118 direct and 248 induced jobs for a total of 366 jobs created within the ROI. This increase in employment would represent a 0.11 percent increase in the region's employment levels, and would fall far below the positive RTV of 3.06 percent. It should be noted that employment associated with construction activities would be temporary in nature and would not extend beyond 2011. The Proposed Action would also generate minor positive changes to other economic measures in the area, including an estimated 0.27 percent increase in sales volume for a

total of \$79,768,390 within the ROI, and an estimated 0.12 percent increase in regional personal income. Again, these changes are very minor and do not exceed the positive RTVs for their respective categories. Tables 4-9, 4-10, and 4-11 provide summaries of the EIFS model inputs, outputs and RTV values respectively.

**Table 4-9. Forecast Input for the EIFS Model**

<b>EIFS REPORT Newark AFRC – Forecast Input</b>	
Change In Local Expenditures	\$25,649,000
Change In Civilian Employment	0
Average Income of Affected Civilian	\$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	\$0
Percent of Military Living On-base	0
Employment Multiplier	3.11
Income Multiplier	3.11

**Table 4-10. EIFS Report for Newark AFRC – Forecast Output**

<b>Forecast Output</b>		
Employment Multiplier	3.11	
Income Multiplier	3.11	
Sales Volume – Direct	\$25,649,000	
Sales Volume – Induced	\$54,119,390	
Sales Volume – Total	\$79,768,390	0.27%
Income – Direct	\$5,614,435	
Income - Induced	\$11,846,460	
Income – Total (place of work)	\$17,460,890	0.12%
Employment – Direct	118	
Employment – Induced	248	
Employment – Total	366	0.11%
Local Population	0	
Local Off-base Population	0	0%

**Table 4-11. EIFS Report for Newark AFRC – RTV Summary**

<b>RTV Summary</b>				
	<b>Sales Volume</b>	<b>Income</b>	<b>Employment</b>	<b>Population</b>
Positive RTV	12.38 %	11.36%	3.06%	1.02%
Negative RTV	-5.36%	-4.36%	-4.1%	-0.94%

*4.10.2.2.2 Demographics*

No significant direct or indirect effects would be expected. Under the Proposed Action, no incoming military or civilian personnel would be moving into the ROI; therefore there would be no changes in the population of the ROI.

*4.10.2.2.3 Environmental Justice*

No effects would be expected. The Proposed Action would not result in adverse impacts on any demographic group residing or working within the economic ROI. Therefore, there would be no disproportionately high and/or adverse impacts on minority populations or low income populations.

*4.10.2.2.4 Protection of Children*

No direct or indirect effects would be expected. The preferred alternative site is located in an industrial/commercial area along a major thoroughfare with no residential areas in the immediate vicinity. The facilities would be fenced from general access and buffered from surrounding commercial areas. During construction activities all measures necessary would be taken to ensure there is no public access to the site. Operation of the facilities would not pose a health risk to children or to the general public. Therefore, there would be no adverse impacts or disproportionate effects on children.

**4.11 TRANSPORTATION**

**4.11.1 Affected Environment**

***4.11.1.1 Roadways and Traffic***

The preferred site located at 1001 Ogletown Road in Newark, DE is currently vacant and does not generate any traffic. Ogletown Road is designated as State Route 273 and has two travel lanes in each direction. The eastbound and westbound travel lanes are separated by a grass median. There is no available current traffic data for Ogletown Road.

#### ***4.11.1.2 Public Transportation***

There are currently no transit routes serving the preferred site. However, the preferred site is served by an inactive railroad spur that connects with the active Amtrak/Conrail lines.

#### **4.11.2 Environmental Consequences**

The following criteria have been developed to assess the transportation impacts for each of the alternatives:

*No Effect* – No alterations of traffic patterns and trends would result from the action.

*No Significant Effect* – Short- or long-term alterations of traffic patterns and trends would result from the action. The intersections and gates may reach capacity but this change would be temporary or managed through improvements.

*Significant Effect* – Traffic patterns would be permanently altered from the action. The intersections and gates would reach capacity and extensive delays would develop.

##### ***4.11.2.1 No Action Alternative***

Implementation of the No Action alternative would not alter the existing transportation infrastructure at the site being considered under the Proposed Action or in the surrounding areas. Therefore, no effects would be expected.

##### ***4.11.2.2 Preferred Alternative – Ogletown Road***

It is anticipated that construction of the proposed facilities under the Preferred Alternative would be completed by 2011. Under the Preferred Alternative, no significant effects on traffic would be expected during the construction of the proposed facilities. However, some short-term adverse impacts could occur depending on the measures taken to manage disruptions, such as requiring most of the construction vehicles delivering materials to do so outside of peak traffic hours and designating sufficient parking and storage space for construction related vehicles and materials. The construction project would be relatively small and construction related traffic is not expected to be significant.

The approximately 22 full-time employees relocating to the proposed facilities would access the site on weekdays. It is anticipated that most of these employees would arrive at the site during the morning peak traffic period and depart the site during the afternoon peak traffic period. The 379 reservists that would be relocating to the proposed facilities would only access the site on weekends. Since drilling occurs over the course of three weekends a month, not all units drill on the same weekend. As a result,

the maximum number of reservists projected to access the site on any weekend would be 162. It is anticipated that all of the reservists would travel between the site and their homes/hotel on both Saturday and Sunday when they train since there will be no berthing facilities on the site. As with the full-time employees, it is assumed that personnel arriving on the weekend would do so during the morning peak traffic period and would depart the site during the afternoon peak traffic period on both weekend days.

An estimate of the trips generated by the proposed AFRC was prepared using the procedures established by the Institute of Transportation Engineers (ITE) *Trip Generation*, Seventh Edition. The AFRC use was modeled as an office building (General Office Building - Code 710) because the full-time employees and reservists are projected to arrive in the morning, stay throughout the day, and leave in the evening similar to office workers. Based on a survey of office developments, the trips generated were associated to an independent variable and time period of analysis (AM and PM peak hours on weekdays) through a regression analysis. Because the number of employees (full-time and reservists) is projected, this was used as the independent variable for projecting the total number of trips generated by the AFRC during the AM and PM peak hours.

The directional distribution of trips entering and exiting the preferred site were also estimated based upon the General Office Building Code (710) for the weekday AM and PM peak hours. The number of trips was calculated based upon 88 percent entering and 12 percent exiting during the AM peak hour and 17 percent entering and 83 percent exiting during the PM peak hour. These percentages were used to calculate the number of vehicles projected to exit the site during the AM peak hour and enter the site during the PM peak hour. These same percentages were used to calculate both weekday and weekend trips.

Using the trip generation procedure outlined by the ITE, the trips projected for the Proposed Action were estimated (Table 4-12). These trips reflect the net increase in activity as a result of implementing the Proposed Action under the Preferred Alternative.

**Table 4-12. Additional Trips Generated by the Preferred Alternative**

	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
<b>Weekday</b>						
Armed Forces Reserve Center	14	1	15	2	16	18
<b>Weekend</b>						
Armed Forces Reserve Center	89	12	101	20	100	120

In terms of site access, there are no plans to have entering or exiting site generated traffic cross the center grass median from or to westbound Ogletown Road (Route 273), respectively. All vehicles entering the facility would turn right from eastbound Ogletown Road (Route 273) and all vehicles exiting the facility would turn right out of the site onto eastbound Ogletown Road (Route 273). Significant delays for traffic entering or exiting the site would be very unlikely considering the low volume of site generated vehicles on weekdays. On weekends, there may be some sporadic delays for vehicles exiting the site depending upon the prevailing conditions along Ogletown Road.

Based upon the resulting volumes under the Preferred Alternative, no significant effects would be expected during operations of the proposed AFRC. Since access to the POV lot would not be gated with a gate guard, no new queues would be anticipated at the proposed AFRC. There are no current plans by the state to improve Ogletown Road (Route 273).

## **4.12 UTILITIES**

### **4.12.1 Affected Environment**

The ROI is defined as utility services on the Ogletown Road site and any potential effects on public utility service providers in the area. Local municipal and commercial utility entities provide all major utilities (water, sewer, natural gas, electricity) at the Ogletown Road site. The utility systems on the proposed site are anticipated to have sufficient capacity to meet the needs of the AFRC facility.

#### ***4.12.1.1 Potable Water Supply***

The proposed site is connected to the city water supply service supplied by United Water Delaware (UWD), an investor-owned utility company. The UWD 2005 Consumer Confidence Report indicated that drinking water supplied to the site was within U.S. EPA and state standards, except for total coliform. Additional testing indicated all parameters were within standards (Nova, 2007).

#### ***4.12.1.2 Sanitary Sewer Service***

There is no wastewater treatment facility located on the preferred site. There is existing sanitary sewer service on the preferred site that is provided by the Northern New Castle County wastewater system which discharges to the City of Wilmington wastewater Treatment Plant (Nova, 2007).

#### ***4.12.1.3 Electrical Service and Distribution***

Electrical service (10,000 kVA) exists on the preferred site which is provided by Delmarva Power Company (Nova, 2007).

#### ***4.12.1.4 Stormwater System***

Stormwater runoff from unimproved areas of the preferred site infiltrates the ground surface or drains to two drainage ditches that traverse the site. Stormwater on the improved areas of the proposed site drains into stormwater catch basins located throughout the paved areas. Stormwater from the catch basins and roof drains is piped to the southern most drainage ditch under a State General Permit for industrial stormwater discharges (Nova, 2007). There is also a Delaware DOT stormwater easement in the northeast portion of the property that collects runoff from Ogletown Road and directs it to the drainage ditch along the eastern periphery of the preferred site.

The topography at the proposed site is generally flat, although the terrain slopes gently to the southeast and well vegetated where not paved, so the flow of rainwater over the surface does not cause much soil erosion. Sediment accumulations in the catch basins and drainage pipes are easily controlled and would not be expected to reduce the capacity of the system to convey stormwater.

#### ***4.12.1.5 Natural Gas***

Natural Gas service is provided to the preferred site by Delmarva Power Company (Nova, 2007).

#### ***4.12.1.6 Communications***

The communications system at the preferred site would consist primarily of a telephone system, but it could also include a fire/security system and computer local area networks. Communication services are available at the site on Ogletown Road.

#### ***4.12.1.7 Solid Waste***

There is no municipal solid waste landfill or a construction and demolition debris landfill located on the preferred site. During previous operations of the box plant, solid waste was collected in dumpsters on the south side of the main plant building (Nova, 2007). For the proposed AFRC facility solid waste pickup would be subcontracted to an appropriate solid waste collection company.

### **4.12.2 Environmental Consequences**

To assess whether impacts to utilities were potentially significant, the following impact thresholds were used to define significance for each utility:

*No effect* – The proposed action does not impact the human or natural environment

***No Significant Effect*** – An impact to the human and/or natural environment would occur, but it is less than thresholds indicated below for “significant effect.”

***Significant Effect*** – thresholds for significance are defined below:

***General Utility Construction*** – Impacts from construction of utilities would be considered potentially significant if expected to cause human health and safety issues considerably above industry norms or Army acceptable standards, and there were no ways to mitigate the disruptions.

***Potable Water Supply*** – Impacts would be considered potentially significant if the proposed action would require more potable water than could be reliably provided by the available potable water sources, leading to shortages, or if regulatory limitations would potentially be exceeded. Major systemic distribution constraints could also be potentially significant; however, the fact that major investments would be required to provide potable water reliably would not necessarily constitute a significant impact if the investments were reasonable for the overall magnitude of proposed construction and would prevent shortages or harm to the environment.

***Wastewater System*** – Impacts would be considered potentially significant if the proposed action would require more wastewater treatment capacity than could be reliably provided or potentially leading to the discharge of effluents in excess of regulatory standards. Major shortfalls in collection capacity could also be potentially significant; however, the fact that major investments would be required to collect wastewater reliably would not necessarily constitute a significant impact if the investments were reasonable for the overall magnitude of proposed construction and would prevent overflows or harm to the environment.

***Stormwater System*** – Impacts would be considered potentially significant if the proposed action would not comply with State or Federal laws governing stormwater discharges.

***Energy Sources*** – Impacts would be considered potentially significant if the proposed action would require energy in quantities that would exceed local and/or regional capacities for supply, leading to potentially unreliable service or shortfalls of power. Major systemic distribution constraints could also be potentially significant; however, the fact that major investments would be required to provide energy reliably would not necessarily constitute a

significant impact if the investments were reasonable for the overall magnitude of proposed construction and would prevent shortages that could affect the AFRC mission.

*Communications* – Impacts would be considered potentially significant if the proposed action would require communication systems to meet mission requirements that could not be provided without major modifications to the existing systems.

*Municipal Solid Waste* – Impacts would be considered potentially significant if the proposed action would require collection and/or disposal that could not be provided in a reliable manner, which could cause waste to accumulate or be disposed of in a manner that could adversely affect human health or the environment.

#### ***4.12.2.1 No Action Alternative***

Under the No Action alternative, no changes would occur at the Preferred Alternative site and current conditions would prevail without change. No effects on utilities would occur.

#### ***4.12.2.2 Preferred Alternative – Ogletown Road***

The overall impacts on utilities as a result of implementing the Proposed Action would be negligible with no significant effects. The minor increase in the site's workforce would likely result in a negligible effect on utility demand. It is anticipated that existing utility services at the site would be able to meet the demand of the proposed facilities. The design of the proposed AFRC facilities would meet the Leadership in Energy and Environmental Design (LEED™) Silver rating, reducing the overall utility demand of the facilities.

**Potable Water Supply** – No significant effects would be expected from implementing the Proposed Action. The projected increase in the workforce would be expected to have negligible effects on the existing potable water system. There are existing supply lines that can provide potable water to the proposed facilities. The new facilities would be outfitted with Energy Star rated water-efficient control devices which would decrease the amount of water usage.

**Sanitary Sewer System** – No significant adverse effects would be expected from implementing the Proposed Action. The new facilities would tie into the existing sewer system lines at the preferred site, and the projected minor increase in the workforce population would be expected to have negligible effects on the existing wastewater system. The municipal system is expected to have sufficient capacity to meet the demand of the proposed facility.

**Electric Service and Distribution** – No significant adverse effects would be expected from implementing the Proposed Action. No new transmission supply lines would be needed for they currently exist at the preferred site, and the installation of Energy Star rated energy-efficient interior and exterior lighting fixtures would decrease the overall utility demand.

**Stormwater System** – No significant adverse effects would be expected from implementing the Proposed Action. The proposed facilities are not expected to significantly increase the amount of stormwater runoff as the site is already developed. While specific stormwater management measures for the Proposed Action have not yet been designed, all stormwater generated on-site from the proposed facilities would be treated for both quality and quantity on-site, and any stormwater discharged off-site via the stormwater drainage ditches would meet all state and local regulatory and permit requirements as specified in Section 9 of Delaware’s Regulations Governing the Control of Water Pollution. The Surface Water Discharges Section, Division of Water Resources of the DNREC is responsible for administering the permits. The new AFRC facility would comply with all applicable state and federal regulatory and permitting requirements during construction and operation of the facility. It is anticipated that the stormwater drainage ditches on-site would be improved to facilitate natural drainage of the site.

**Natural Gas** – No significant effects would be expected from implementing the Proposed Action. A negligible increase in natural gas usage would result from the increase in the workforce population. The existing natural gas provider is expected to have sufficient capacity to accommodate the AFRC demand.

**Communications** – Communication lines exist at the preferred site so no effects would result from implementing the Proposed Action.

**Solid Waste** – No significant adverse effects would be expected from implementing the Proposed Action. Short-term minor adverse effects would be expected from the demolition of some or all of the existing buildings on the proposed site. Debris from the demolition of buildings on the preferred site and construction of the new facilities would temporarily increase the amount of solid waste generated. It is anticipated that sufficient capacity exists in the regional landfill to accommodate the amount of construction and demolition (C&D)-related debris generated by the project. To reduce the amount of C&D debris to be disposed of at the regional landfill, C&D debris will be recycled to the greatest extent feasible. All C&D debris that is not able to be recycled would be disposed of in accordance with applicable federal and state laws at a permitted disposal facility.

## **4.13 HAZARDOUS MATERIALS USE, HANDLING AND STORAGE**

Hazardous materials are substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present a substantial danger to public health or the environment if released. These typically include reactive materials such as explosives, ignitables, toxics (such as pesticides), and corrosives (such as battery acid). When improperly stored, transported, or otherwise managed, hazardous materials can significantly affect human health and safety and the environment.

### **4.13.1 Affected Environment**

#### ***4.13.1.1 Hazardous Materials Use***

Hazardous materials used in previous manufacturing operations at the preferred site included parts washing solvents, caustic soda, inks, ink additives, glues, paints, hydraulic and lubricating oils (Nova, 2007). There are no current operations or hazardous materials used on the site.

#### ***4.13.1.2 Hazardous Waste Storage and Handling Areas***

No hazardous wastes are currently stored or handled on the preferred site. Historical operations at the site generated spent solvents which were removed by a disposal/recycle contractor (Nova, 2007, ESA Report).

#### ***4.13.1.3 Site Contamination Cleanup***

There are no known hazardous material or petroleum product releases, solid waste management units, contaminated or cleanup areas on the preferred site. The former site occupant was a RCRA small quantity generator of hazardous waste. Three underground storage tanks including two 7,500-gallon diesel fuel and a 25,000-gallon heating oil tanks were removed from the site in 1993. Confirmation sampling found no evidence of a release from the tanks. The 2007 ESA conducted at the site found no evidence of contamination on the property, though it did note a coating of fresh diesel oil in the diesel pump house on both the base of the diesel-fueled pump and on the surrounding concrete floor. It appeared that the fuel was coming from a recent or ongoing leak in the pumping system; however, there was no evidence that the diesel oil was released to the ground surface on the exterior of the building (Nova, 2007). The ESA recommended that “the leak and the surficial staining to the concrete should be addressed as part of normal maintenance activities at the Site.” As part of the Environmental Conditions of Property report being prepared by the Army for the site, follow-on interviews with the current caretaker of the property indicated that the pump house’s concrete floor and diesel-fueled pump have been cleaned, the leak has been repaired, and the pump is in good working condition (Mitchell, 2009).

#### ***4.13.1.4 Special Wastes***

*Asbestos Containing Material.* The 2007 ESA conducted at the preferred site found suspected asbestos containing material (ACM) at several locations in the main building. Testing indicated the presence of ACM on piping located in the boiler and converter room. The buildings on the site were constructed in 1964 and construction materials are likely to have contained ACM. A comprehensive ACM survey was recommended (Nova, 2007). All construction debris containing ACM would be handled and disposed of in accordance with applicable regulations.

#### **4.13.2 Environmental Consequences**

For the purposes of assessing the significance of impacts related to hazardous and toxic substances, the following impact thresholds were developed:

*No Effect* – There would be no hazardous materials or waste handled, stored, used, or disposed of.

*No Significant Effect* – Action would result in the generation of materials or waste to be handled, stored, used, or disposed; but all hazardous or toxic materials and/or wastes could be safely and adequately managed in accordance with all applicable regulations and policies, with limited exposures or risks.

*Significant Effect* – Action would result in a substantial generation or increase (more than 100%) in the amount of materials or waste to be handled, stored, used, or disposed of, and this could not be safely or adequately handled or managed by the proposed staffing, resulting in unacceptable risk, exceedance of available waste disposal capacity, or probable regulatory violation. Site contamination conditions would preclude development of the site for the proposed use.

##### ***4.13.2.1 No Action Alternative***

No effects would be expected under the No Action alternative, as the proposed new facilities would not be constructed.

##### ***4.13.2.2 Preferred Alternative – Ogletown Road***

Implementing the Proposed Action would result in no significant adverse effects related to hazardous materials, use, handling, and storage.

The proposed AFRC building would consist primarily of office space and administrative service areas. There would be minimal use of hazardous materials, such as janitorial products and printing supplies. Any hazardous materials will be handled and stored in accordance with applicable regulations and label precautions and will not have any significant adverse impacts, though some negligible long-term adverse effects would be expected from the minimal use of hazardous materials and waste generated by the proposed facilities.

The proposed facility would include vehicle service bays for routine vehicle maintenance and a controlled waste storage area. Routine vehicle maintenance activities require the use of several types of hazardous materials. All hazardous materials would be handled and stored in appropriate hazardous materials cabinets or containers in accordance with applicable regulations and label precautions. The facility design includes floor drains that convey flow through oil-water separators.

Hazardous wastes would be stored in containers and with labels as required by applicable regulations. All hazardous wastes would be transported off-site to licensed treatment or disposal facilities by approved licensed contractors. Any spills or releases of hazardous wastes at the proposed facilities would be handled according to applicable regulations.

Based on the potential for small spills and the overall use of hazardous materials and disposal of hazardous waste, negligible short- and long-term adverse impacts would be expected from implementation of the Proposed Action. The possibility for even these very small amounts of materials to migrate off-site or impact area natural resources would be greatly reduced by the use of drip trays, mats, OWS, and the application of standard BMPs.

Existing buildings on the site will need to be demolished prior to construction of the new facilities. Demolition of these buildings, which were all built prior to 1978, would be expected to require some abatement and removal of asbestos-containing materials and/or lead-based paint. Such materials would be removed and disposed of in accordance with applicable OSHA, U.S. EPA and other state, federal and Army regulations. Measures would be implemented to control waterborne pollutants and prevent any effects to groundwater.

#### **4.14 CUMULATIVE EFFECTS SUMMARY**

A cumulative impact is defined as “the impacts on the environment that result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertake such other actions” (40 CFR

1508.7). The section goes on to note: “such impacts can result from individually minor but collectively significant actions taking place over a period of time.” Cumulative impacts associated with implementation of the Proposed Action would include any impacts from other on-going actions that would be incremental to the impacts of constructing the proposed AFRC complex and realigning units to Newark, DE.

Based on coordination with the city of Newark’s planning and development department the only project in the vicinity of the preferred site that is planned for redevelopment is a parcel of land to the west of the site. The parcel was annexed last year by the City of Newark, is partially paved and partially unpaved, and was used by a waste management company who only parked their trucks on the site. No wastes were ever brought on to the site. The site was planned to be redeveloped into a car dealership, with a dealership showroom/office and a lot. However, plans for this redevelopment are on hold indefinitely due to the slow economy (Lopata, 2008). Because it is not known if this development would actually occur, it is not further analyzed for cumulative impacts.

#### **4.14.1 No Action Alternative**

There would be no cumulative impacts associated with the No Action alternative.

#### **4.14.2 Preferred Alternative – Ogletown Road**

There are no projects in the vicinity to consider for cumulative impacts; therefore implementing the Proposed Action would have no cumulative impacts. Even if the car dealership were to be developed on the parcel of land to the west of the preferred site, given the developed nature and the industrial/commercial land use in the vicinity, it is not likely that any cumulative impacts from this project would be significant.

### **4.15 MITIGATION SUMMARY**

None of the predicted effects of implementing the Proposed Action would result in significant impacts; therefore, mitigation is not needed. However, the Army may consider implementing the use of BMPs in the construction and operation of the AFRC and associated facilities, including specific measure to reduce potential erosion, stormwater runoff, and sediment transport during site preparation and construction activities.

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## 5.0 FINDINGS AND CONCLUSIONS

### 5.1 FINDINGS

#### 5.1.1 Consequences of the No Action Alternative

Under the No Action alternative, the proposed new AFRC and the associated facilities would not be constructed, and no environmental impacts would occur.

#### 5.1.2 Consequences of the Proposed Action

The Proposed Action would not have any significant adverse effects on any of the environmental or related resource areas at the preferred site or to areas surrounding the preferred site in Newark, DE. All of the resource areas were evaluated to be at the No Effect or No Significant Effect levels.

A summary of impacts by resource area for the No Action alternative and the Preferred Alternative is provided in Table 5-1.

**Table 5-1. Summary of the Impacts of the Proposed Action Alternatives**

Resource	No Action Alternative	Preferred Alternative
<b>Land Use</b>		
<i>Regional Geographic Setting and Location</i>	No effect.	No effect.
<i>Site Land Use</i>	No effect.	No effect.
<i>Current and Future Development in the Region of Influence</i>	No effect.	No significant effect.
<b>Aesthetic and Visual Resources</b>	No effect.	No significant effect.
<b>Air Quality</b>		
<i>Ambient Air Quality Conditions</i>	No effect.	No significant effect.
<i>Meteorology/Climate</i>	No effect.	No effect.
<i>Air Pollutant Emissions at Project Site</i>	No effect.	No significant effect.
<i>Regional Air Pollutant Emissions Summary</i>	No effect.	No significant effect.
<b>Noise</b>	No effect.	No significant effect.
<b>Geology and Soils</b>		
<i>Geologic and Topographic Conditions</i>	No effect.	No significant effect.
<i>Soils</i>	No effect.	No significant effect.

<b>Resource</b>	<b>No Action Alternative</b>	<b>Preferred Alternative</b>
<i>Prime Farmland</i>	No effect.	No effect.
<b>Water Resources</b>		
<i>Surface Water</i>	No effect.	No significant effect.
<i>Wetlands</i>	No effect.	No effect.
<i>Hydrogeology/Groundwater</i>	No effect.	No significant effect.
<i>Floodplains</i>	No effect.	No effect.
<i>Coastal Zone</i>	No effect.	No effect.
<b>Biological Resources</b>		
<i>Vegetation</i>	No effect.	No significant effect.
<i>Wildlife</i>	No effect.	No significant effect.
<i>Threatened, Endangered, and Sensitive Species</i>	No effect.	No effect.
<b>Cultural Resources</b>		
<i>Archaeology</i>	No effect.	No effect.
<i>Built Environment</i>	No effect.	No effect.
<i>Native American Resources</i>	No effect.	No effect.
<b>Socioeconomics</b>		
<i>Economic Development</i>	No effect.	No significant effect.
<i>Demographics</i>	No effect.	No effect.
<i>Environmental Justice</i>	No effect.	No effect.
<i>Protection of Children</i>	No effect.	No effect.
<b>Transportation</b>		
<i>Roadways and Traffic</i>	No effect.	No significant effect.
<i>Public Transportation</i>	No effect.	No effect.
<b>Utilities</b>		
<i>Potable Water Supply</i>	No effect.	No significant effect.
<i>Sanitary Sewer System</i>	No effect.	No significant effect.
<i>Electrical Service and Distribution</i>	No effect.	No significant effect.
<i>Storm water System</i>	No effect.	No significant effect.
<i>Natural gas</i>	No effect.	No significant effect.
<i>Communications</i>	No effect.	No significant effect.
<i>Municipal Solid Waste</i>	No effect.	No significant effect.
<b>Hazardous Materials Use, Handling, and Storage</b>		
<i>Uses of Hazardous Materials</i>	No effect.	No significant effect.
<i>Storage and Handling Areas</i>	No effect.	No significant effect.
<i>Site Contamination and Cleanup</i>	No effect.	No significant effect.
<b>Cumulative Effects</b>	No effect.	No effect.

## 5.2 CONCLUSIONS

Based on the analysis performed in this EA, implementation of the Proposed Action at the preferred site would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an EIS is not required. Issuance of a FNSI would be appropriate.

None of the predicted effects of the Proposed Action would result in significant impacts; therefore, mitigation is not needed, although the Army may consider the use of Best Management Practices (BMPs) in addition to those required by law, regulation, or the Army. The following permits and or plans would be required in implementing the projects identified in this analysis:

- A Sediment and Stormwater Plan and a National Pollutant Discharge Elimination System (NPDES) permit would likely be required.
  - A Notice of Intent for Stormwater Discharges Associated Construction Activity under a NPDES General Permit would be submitted to the Division of Soil and Water Conservation of the DNREC.
  - The Sediment and Stormwater Plan would likely include BMPs to be used during site preparation, earthworks, and construction activities at the site. Potential BMPs may include installation of silt fences, coverage of soil piles with mulch, installation of hay bales, and maintaining exposed surface soils in a damp state.
- Any stormwater discharged off-site via the stormwater drainage ditches would meet all state and local regulatory and permit requirements as specified in Section 9 of Delaware's Regulations Governing the Control of Water Pollution.
- Depending on the final design of the proposed facilities, a Conditional "No Exposure" Exclusion could be granted and the facility would not need to monitor or develop a Stormwater Plan. A Conditional "No Exposure" Exclusion is a state requirement and is granted upon approval of a "No Exposure" Certification Form.

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This section identifies local, state and federal agencies that were contacted or consulted during the EA process.

### **Federal Officials and Agencies**

U.S. Fish and Wildlife Service

### **Native American Tribes**

Delaware Nation

Stockbridge Munsee Tribe

### **State and City Officials and Agencies**

Delaware Division of Fish and Wildlife

Delaware State Historic Preservation Office

City of Newark, DE Planning & Development Department

### **Libraries**

Newark Free Library

Wilmington Public Library

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This section identifies local, state and federal agencies that have received a copy of the EA and draft FNSI and property abutters who received a notice indicating that the documents are available for review.

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## 10.0 ACRONYMS

ACM	Asbestos Containing Material
AEPI	U.S. Army Environmental Policy Institute
AFRC	Armed Forces Reserve Center
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
AQI	Air Quality Index
ARPA	Archaeological Resources Protection Act
ASIV	Available Site Identification and Validation
AT/FP	Anti-Terrorism/Force Protection
BMP	Best Management Practice(s)
BRAC	Base Closure and Realignment
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as SuperFund)
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COBRA	Cost of Base Realignment Actions
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibels
dba	A-weighted Decibels

DD	Defense Department (forms only)
DEARNG	Delaware Army National Guard
DNREC	Delaware Department of Natural Resources and Environmental Control
DoD	Department of Defense
DOT	Department of Transportation
EA	Environmental Assessment
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
ESA	Environmental Site Assessment
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FWPCA	Federal Water Pollution Control Act
HVAC	Heating, Ventilation, and Air Conditioning
ITE	Institute of Transportation Engineers
kVA	kilo-Volt Ampere
lb	pound
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service

m <sup>3</sup>	cubic meters
MEP	Military Equipment Parking
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAMS	National Air Monitoring Stations
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPV	Net Present Value
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O <sub>3</sub>	Ozone
OSHA	Occupational Safety and Health Administration
OTJAG	Office of The Judge Advocate General
OTR	Ozone Transport Region
OWS	Oil Water Separator
Pb	Lead
PCB	polychlorinated biphenyls
PCPI	Per Capita Personal Income

PL	Public Law
PM <sub>10</sub>	particles with a diameter less than or equal to a nominal 10 micrometers
PM <sub>2.5</sub>	particles with a diameter less than or equal to a nominal 2.5 micrometers
POV	Privately-Owned Vehicle
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
RTV	Rational Threshold Value
SDWA	Safe Drinking Water Act
SF	square feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations
SO <sub>2</sub>	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasures
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Properties
TMDL	Total Maximum Daily Load
TSCA	Toxic Substance Control Act
TPY	tons per year
ug	micrograms
USACE	U.S. Army Corps of Engineers
USAR	U.S. Army Reserve
USARC	U.S. Army Reserve Center

USC	United States Code
USDA	U.S. Department of Agriculture
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VMS	Vehicle Maintenance Shop
VOC	Volatile Organic Compounds
UWD	United Water Delaware

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## **APPENDIX A— SECRETARY OF DEFENSE JUSTIFICATION FOR BRAC ACTIONS AT NEWARK, DE**

### **Reserve Component Transformation in Delaware**

#### *Secretary of Defense Recommendation*

Close the Major Robert Kirkwood United States Army Reserve Center and its organizational maintenance shop in Newark, DE and re-locate units to a new Armed Forces Reserve Center and organizational maintenance support facility in Newark, DE, if the Army is able to acquire suitable land for the construction of the facilities. The new AFRC shall have the capability to accommodate Delaware Army National Guard units from the William Nelson Armory in Middletown, DE, if the state decided to relocate those units.

#### *Secretary of Defense Justification*

This recommendation transforms Reserve Component facilities in the State of Delaware. The implementation of this recommendation will enhance military value, improve homeland defense capability, greatly improve training and deployment capability, create significant efficiencies and cost savings, and is consistent with the Army's force structure plans and Army transformational objectives.

This recommendation is the result of a state-wide analysis of Reserve Component installations and facilities conducted by a team of functional experts from Headquarters, Department of the Army, the Office of the State Adjutant General, and the Army Reserve Regional Readiness Command.

This recommendation closes an Army Reserve Center in Newark, DE and relocates units to a new Armed Forces Reserve Center and organizational maintenance support facility capable of accommodating Delaware Army National Guard units.

This recommendation reduces military manpower and associated costs for maintaining existing facilities by collapsing two facilities into one. The Department understands that the State of Delaware will close the William Nelson Armory in Middletown, DE. The Armed Forces Reserve Center will have the capability to accommodate these units if the state decides to relocate the units from the closed facilities into the new AFRC.

The implementation of this recommendation will enhance military value, improve homeland defense capability, greatly improve training and deployment capability, create significant efficiencies and cost savings, and is consistent with the Army's force structure plans and Army transformational objectives.

This recommendation considered feasible locations within the demographic and geographic areas of the closing facilities and affected units. The site selected was determined as the best location because it optimized the Reserve Components' ability to recruit and retain Reserve Component soldiers, and to train and mobilize units affected by this recommendation.

This recommendation provides the opportunity for other Local, State, or Federal organizations to partner with the Reserve Components to enhance homeland security and homeland defense at a reduced cost to those agencies.

Although not captured in the COBRA analysis, this recommendation avoids an estimated \$10.9M in mission facility renovation costs and procurement avoidances associated with meeting AT/FP construction standards and altering existing facilities to meet unit training and communications requirements. Consideration of these avoided costs would reduce costs and increase the net savings to the Department of Defense in the 6-year BRAC implementation period and in the 20-year period used to calculate NPV.

#### *Community Concerns*

There were no formal expressions from the community.

#### *Commission Findings*

The Commission found no reason to disagree with the recommendation of the Secretary of Defense. In addition, the Commission notes that the Army's process was well thought-out and inclusive of the leadership of the Reserve Components and the State.

#### *Commission Recommendations*

The Commission found the Secretary's recommendation consistent with the final selection criteria and force structure plan. Therefore, the Commission approved the recommendation of the Secretary.

## **APPENDIX B— FEDERAL AND STATE COORDINATION LETTERS**

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David W. Pugh  
USACE/SAM/PD-M  
P.O. Box 2288  
Mobile, Alabama 36628-0001

9 January 2009

Mr. Timothy Slavin, Director  
State Historic Preservation Office  
Division of Historical and Cultural Affairs  
21 The Green  
Dover, DE 19901

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) for the Construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware

Dear Mr. Slavin:

The Department of the Army (DA) is preparing an Environmental Assessment (EA) for the proposed construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware. On September 8, 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended to close the Major Robert Kirkwood United States Army Reserve Center (USARC) and its organizational maintenance shop in Newark, DE, and re-locate units to a new AFRC in Newark, DE capable of accommodating Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE, if the DA is able to acquire suitable land for construction of the facilities. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. To implement these recommendations, the DA is proposing to purchase a portion or all of an approximately 20-acre, privately-owned parcel of property at 1001 Ogletown Road in Newark, DE to construct the new facilities (see Enclosure 1).

The EA will analyze and document potential environmental effects associated with the DA's proposed realignment actions in Newark, DE. The EA is being prepared in strict accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508); and Environmental Analysis of Army Actions (32 CFR Part 651).

The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

In accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA), an evaluation of the potential impacts associated with implementing this action is required. To

support the evaluation a Phase I cultural resource survey of the entire 20-acre receiving site was conducted in November 2008. The survey followed the standards of the 1993 *Guidelines for Architectural and Archaeological Surveys in Delaware*. Based on the results of the Phase I cultural resource survey and the historically disturbed nature of the proposed site, it is believed that the proposed action will not effect any cultural resources. Enclosed is a copy of the draft report *Phase I Archaeological Survey of the Armed Forces Center, Newark, Delaware* by Louis Berger Group, for your review and comments.

The property at 1001 Ogletown Road in Newark, DE is currently occupied by the former Temple Inland Newark Box Plant. The plant complex consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985. The buildings do not meet the National Register of Historic Places (NRHP) requirement of 50 years of age or more. In addition, the buildings do not possess significance in regards to historic events, architecture, or important persons to warrant NRHP eligibility under Criteria Consideration G: Properties that Have Achieved Significance Within the Past Fifty Years.

Most of the project area has been previously disturbed by the construction of the factory building and associated infrastructure, but approximately five acres of land appeared undisturbed by modern construction, and these areas were tested for archaeological remains. A total of five transects consisting of twenty eight shovel tests were completed along with a visual inspection of the entire property. No archaeological remains were recovered or identified during the survey. The findings of the Phase 1 cultural resource survey will be detailed in a final survey report that will conform to the standards of the Delaware State historic Preservation Office.

We welcome your input and request your concurrence of this determination.

Thank you in advance for your cooperation in this matter. If there are any questions or if there is a need for additional information, please contact Mr. Spence Smith of the Louis Berger Group, Inc., 295 Promenade Street, Providence, RI 02908 or David Pugh of the USACE, at [David.W.Pugh@usace.army.mil](mailto:David.W.Pugh@usace.army.mil); (251)694-3761. Please provide any comments within 30 calendar days from day of receipt of this letter.

Sincerely,

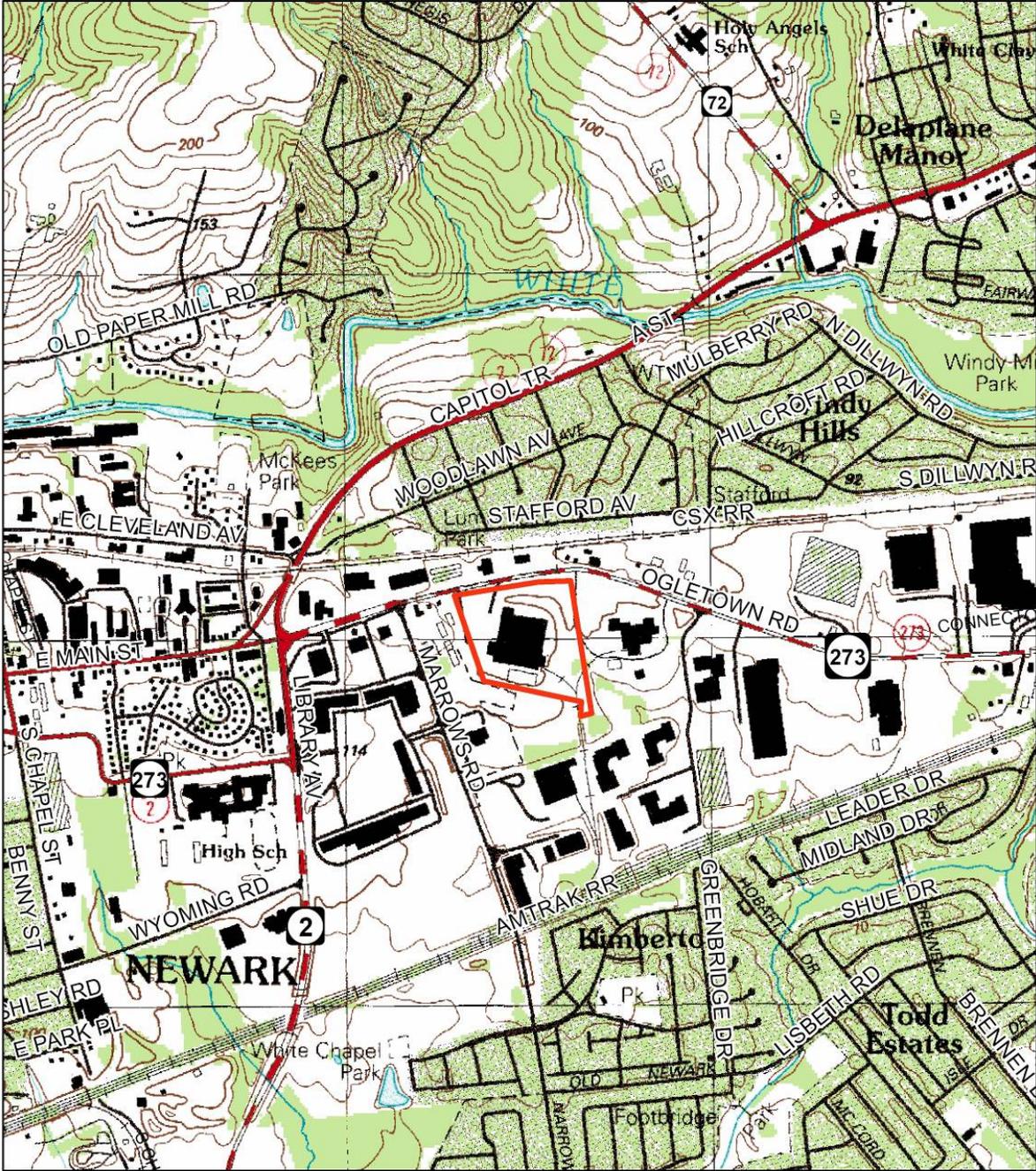


David W. Pugh

Enclosure:

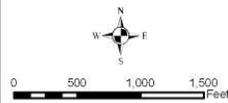
Cc: Ms. Joan Larrivee, Delaware Division of Historical & Cultural Affairs, 21 The Green, Dover, DE 19901  
Ms Garrett, 99 Soldiers Way, Coraopolis, PA 15108  
Ms Sue Hotham, BRAC NEPA Support Team, U.S. Army Corps of Engineers, New England District, 696 Virginia Rd. Concord, MA 01742

**Enclosure 1**  
**Project Location for BRAC Proposed Action Alternative**  
**USGS Topographic Quadrangle**



**Legend**

Site Boundary



**Newark, Delaware**  
**Preferred Alternative Site**  
**(Newark East Quadrangle)**

Sources: New Castle County,  
 Delaware Datamit, USGS, ESRI  
 Coordinate System: NAD 1983,  
 State Plane Delaware FIPS 0700 Feet  
 Prepared By: The Louis Berger Group

**QUAD INDEX**



**MAP INDEX**





**Delaware Division of Historical and Cultural Affairs  
State Historic Preservation Office**  
21 The Green  
Dover, DE 19901  
302-736-7400  
302-739-5660 (fax)

## Archaeological Survey Report Form

(For use when NO archaeological sites were identified; see *Guidelines and Instructions*.)

- 1. Report title:** Phase I Archaeological Survey of the Armed Forces Reserve Center, Newark, Delaware
- 2. Date:** 12/12/2008
- 3. Author(s):** Gregory Katz and Lisa Kraus
- 4. Consulting firm name and address:** The Louis Berger Group, Inc. 2445 M Street NW, Washington, D.C. 20037
- 5. Client agency:** U.S. Army Corps of Engineers, Mobile District, BRAC NEPA Support Team

### LOCATION

- 6. County (check as many as apply):**  New Castle  Kent  Sussex
- 7. Nearest town(s):** Newark
- 8. Physiographic and geographic zone(s):** Upper Coastal Plain near Fall Line transition, Piedmont geographic zone

### PROJECT DESCRIPTION

- 9. Dates of fieldwork:** 11/3/2008 and 11/4/2008
- 10. Size of area covered: unit used:**  acres  hectares  
**project area:** 20.00 **surveyed area:** 1.40
- 11. Project description (describe location and nature of project):** The Department of Defense is proposing to construct an Armed Forces Reserve Center (AFRC) in Newark, Delaware as part of Base Realignment and Closure (BRAC) activities. Louis Berger Group, Inc. (Berger), under contract with the U.S. Army Corps of Engineers, Mobile District, is

conducting cultural resource studies in advance of the construction. The studies include a Phase I archaeological survey, which is the focus of the present report.

The proposed facility is on the eastern side of Newark along Ogletown Road (SR 273) and is on a parcel which comprises approximately 20 acres (Figure 1). The project is within New Castle County in the White Clay Creek hundred. The project setting is on an upland flat landform that is currently a vacant industrial facility. The receiving site includes a complex of industrial buildings, parking lots, paved driveways, and grassy lawns. The complex is formerly the Temple Inland Newark Box Plant and consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985. The buildings do not meet the National Register of Historic Places (NRHP) requirement of fifty years of age or more. The southern margin of the receiving site is covered in briars and scrub growth.

The project is located in the Upper Coastal Plain physiographic zone near the Fall Line transition. The APE is approximately 2,500 feet south of White Clay Creek, which drains into the Delaware River near Wilmington. Mapped soil series for the area include Delanco silt loam (DeA, DeB2), Elsinboro silt loam (EnB2), and Kinkora silt loam (KrA) (USDA 1970).

## RESEARCH DESIGN

12. **Survey objectives:** The goal of the project was to determine if NRHP-eligible archaeological sites may be found the project area, and to obtain data about settlement patterns in both prehistoric and historic times. The project area was divided into areas of high and low archaeological potential based on degree of disturbance and distance to water.
13. **Survey methods (describe both field and background research methods):** Background research was conducted to develop an understanding of the historical development of the project area and its environs, and also to help determine areas of archaeological sensitivity. Research included searches at the archives at the Delaware Division of Historical and Cultural Affairs and the archives of the Louis Berger Group in Washington. Digital repositories were also searched over the internet, including: geologic data from the Delaware Geological Survey and the U.S. Department of Agriculture's soil survey series; historic aerial photographs from the Delaware DataMIL; and historic maps from the University of Delaware Libraries and the National Archives. Prior survey reports were also consulted, including: Martin Abbott's National Register Eligibility Study, Ogletown Road (State Route 273) Between Marrows Road and the Amtrak Railroad Lines (1995); Ellis Coleman et al.'s Phase I and II Archaeological Investigations of the Ogletown Interchange Improvements Project Area, DelDOT Archaeology Series 61 (1987); and Angela Hoseth et al.'s Final Archaeological Investigations of the A. Temple Site (7NC-D-68), DelDOT Archaeology Series 81 (1990).

The field survey was carried out by a combination of surface inspection and systematic shovel testing. The project area was initially inspected on foot. The archaeologists examined areas of exposed ground, looked for stands of distinctive vegetation or micro-topographic irregularities (pits, hummocks, and the like) that might indicate locations of

former structures, possible cellar pits, etc. Shovel testing was carried out in all high potential areas, with limited testing extending into peripheral low-probability zones. The overall strategy called for shovel test pits to be excavated at 15-meter (50-foot) intervals. One of the main questions confronting the archaeologists was the degree of disturbance at the parcel, which had obviously been graded and landscaped. Shovel testing, supplemented with split-spoon augering, was determined to be adequate to ascertain disturbance.

- 14. Expected site types for this area (cite earlier surveys & known nearby resources, information from historic maps or research):** Because of the proximity of the Newark-Cristiana Road, which dates to the 1700s, the undisturbed portions of the project area were considered to have potential for historic archeological sites dating to the eighteenth and nineteenth centuries. In addition, the area surrounding a small drainage in the southeast corner of the property was considered to have some potential for small prehistoric sites, given its proximity to surface water. The APE has not been previously subjected to archaeological survey. Four archaeological sites have been identified in the project vicinity. These sites (7NC-D-144, 7NC-D-145, 7NC-D-146, and 7NC-D-147) were identified to the south/southwest of the APE, lying approximately 1,200-2,000 feet distant. The sites are prehistoric procurement sites that were destroyed during the construction of a shopping center.

## RESULTS and RECOMMENDATIONS

- 15. Fieldwork (describe survey; add maps as needed):** A total of 28 shovel tests were completed on November 3 and 4, 2008. They were placed along five transects (Transects A-E). After a visual inspection of the entire property and limited split-spoon augering, it was determined that the highest potential areas were located on the east side of the property, particularly in the northeast and southeast corners. The north-central portion of the property, although it is a grassy lawn, is visibly graded, and soil probes in this area showed disturbed soils.

The northeast corner of the property includes a knoll near a small creek or drainage that runs across the north side of the property. The terrain is open and grassy, with few trees. Two transects of shovel tests, A and B, were established in this area with tests placed at 15-meter (50-ft) intervals. There were a total of 14 shovel tests in the two transects, and one of these, STP A1, contained one piece of whiteware (Figure2). Radials were placed around A1, but no other artifacts were recovered. The soil was consistent along the east side of the property, with a typical soil profile consisting of 20 cm (0.8 ft) of brown (10YR 4/3) silty clay loam underlain by 10 cm (0.4 ft) of grayish brown (10YR 5/2) clay loam, underlain by yellowish-brown clay (10YR 5/6). No archaeological remains or features were noted in the area.

The wooded strip along the southern boundary of the property is largely low and wet. In places it has been mechanically graded, producing an even slope rising from a straight ditch that runs along the edge of the parking lot. The only place that appeared to have archaeological potential was the southeast corner, where small knolls are present near

the confluence of two small streams, north and south of the railroad tracks. The area south of the main building (Transect C) is overgrown with pear trees, rose bushes, blackberries and other thorny shrubs. A typical soil profile for this area included 10-12 cm (0.4 – 0.5 ft) of dark grayish-brown (10YR 4/2) silt loam topsoil, underlain by light olive brown (2.5Y 5/3) silty clay loam, which transitioned to clay loam at about 25 cm (1 ft) below ground surface. Transects C, D, and E were excavated in the southeast corner of the property, included a total of 14 shovel tests, and no archaeological remains were recovered or identified during survey in this area.

- 16. Artifacts (describe any found; identify location; explain why determined not to be a site):** The survey recovered a total of one artifact, a fragment of whiteware from test A1. This test was in close proximity to Ogletown Road and along the eastern property boundary. The artifact likely represents either the casual discard of domestic refuse in a former field, perhaps related to manuring, or the disposal of trash along a property boundary. The artifact was recovered from a plow-disturbed soil stratum and is an isolated find. The artifact has no known historical associations or ability to yield information important to history.
- 17. Recommendations:** The survey of the proposed Armed Forces Reserve Center identified no archaeological sites and is at an industrial facility that is less than 50 years old. Archaeological testing was conducted in areas thought to have high archaeological potential; however, the testing located no resources. Instead, the survey demonstrated widespread and pervasive ground disturbance in the APE. The untested portion of the APE has very low archaeological potential. Berger recommends no additional cultural resource work for this project, as the project will have no effect to NRHP-eligible or listed properties.

## ATTACHMENTS

- 18. Attachments checklist:**
- a.  **bibliography**
  - b.  **location map (USGS or equivalent)**
  - c.  **detailed map(s) (project plans and/or field survey map)**
  - d.  **historic map(s) (list)** 1906 USGS Quadrangle Map; D.G. Beer's Atlas of the State of Delaware (1868)
  - e.  **photographs of general project/surveyed area**
  - f.  **table of collection units and/or excavated tests**
  - g.  **soils map(s)**

**Others (list, if any):**

**Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware**

**Bibliography**

Abbott, Martin B.

- 1995 *National Register Eligibility Study, Ogletown Road (State Route 273) Between Marrows Road and the Amtrak Railroad Lines, White Clay Creek Hd, New Castle County, Delaware.* Kise, Franks & Straw, Inc. Philadelphia, PA. Unpublished manuscript on file at SHPO, Dover, Delaware

Baist, G.W.

- 1893 *Atlas of New Castle County, Delaware.* G.W. Baist, Philadelphia, Pennsylvania

Beers, Daniel G.

- 1868 *Atlas of the State of Delaware.* Pomeroy and Beers, Philadelphia, Pennsylvania

Coleman, Ellis C., Angela Hoseth, and Jay F. Custer

- 1987 *Phase I and Phase II Archaeological Investigations of the Ogletown Interchange Improvements Project Area, Newark, Delaware.* University of Delaware Department of Anthropology Center for Archaeological Research. Delaware Department of Transportation Archaeology Series No. 61. Dover, Delaware

Custer, Jay F., Scott C. Watson, Angela Hoseth, and Ellis C. Coleman

- 1988 *Final Archaeological Excavations at the Dairy Queen Site (7NC-D-129), New Castle County, Delaware.* University of Delaware Department of Anthropology Center for Archaeological Research. Delaware Department of Transportation Archaeology Series No. 63. Dover, Delaware

Hoseth, Angela, Colleen De Santis Leithren, Wade P. Catts, Ellis C. Coleman, and Jay F. Custer

- 1990 *Final Archaeological Excavations of the A. Temple Site (7NC-D-68), Chestnut Hill Road (Route 4), Ogletown, New Castle County, Delaware.* University of Delaware Department of Anthropology Center for Archaeological Research. Delaware Department of Transportation Archaeology Series No. 81. Dover, Delaware

United States Department of Agriculture (USDA) Soil Conservation Service

- 1970 *Soil Survey of New Castle County, Delaware.* U.S. Government Printing Office, Washington, D.C.

United States Geological Survey (USGS)

- 1906 15' Quadrangle, Wilmington, Delaware. USGS, Washington, D.C.  
1993 7.5' Quadrangle, Newark East, Delaware. USGS, Reston, Virginia.

**Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware**

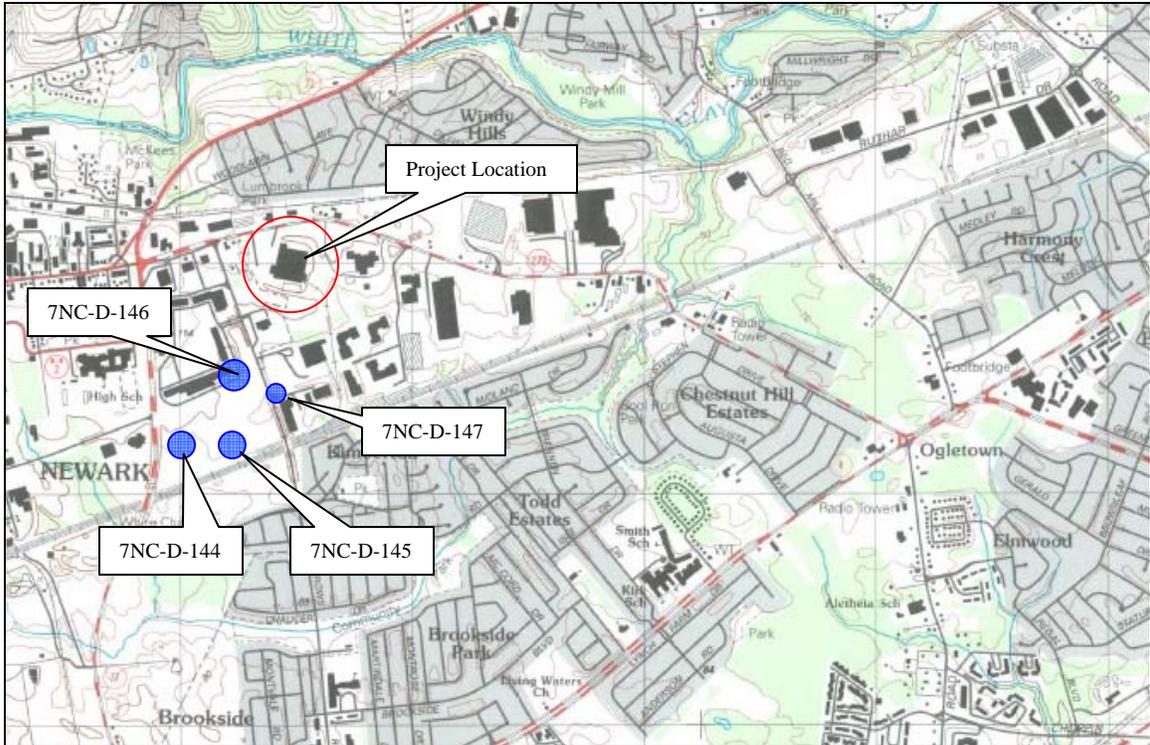


Figure 1: Project Location and Known Sites, USGS Newark East Quadrangle (1993)

Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware



Figure 2: Aerial View of AFRC Site Showing STP Locations, Positive Test in Red

Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware

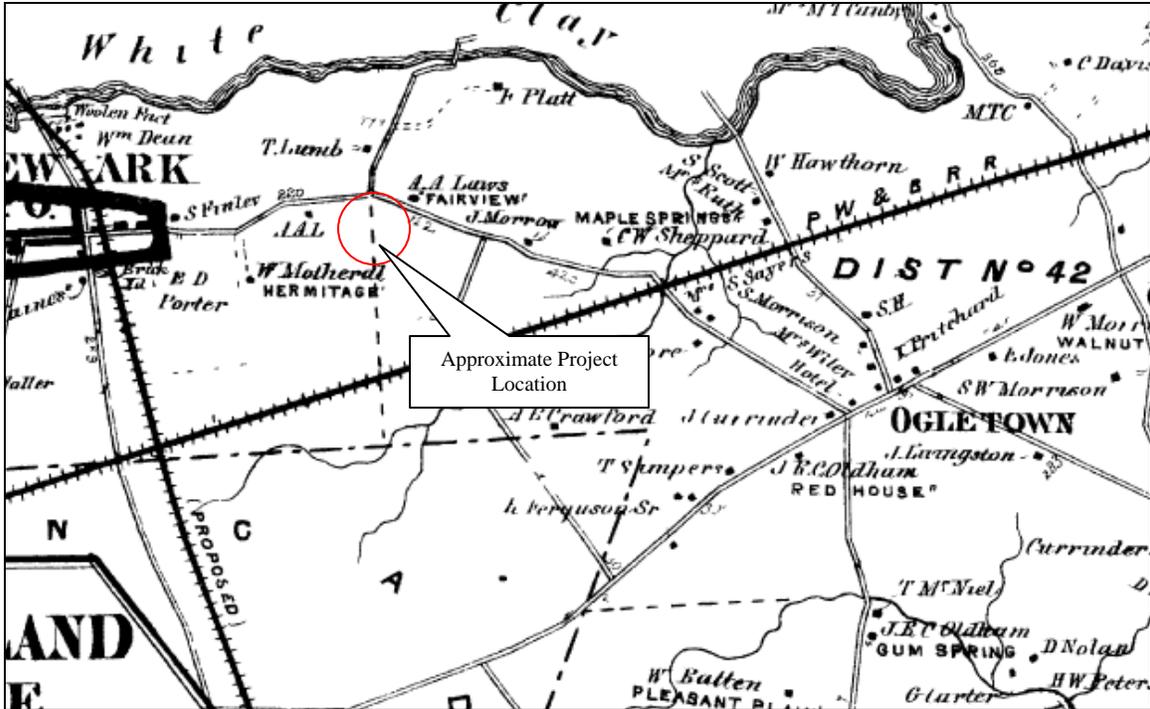


Figure 3: Detail of Beers' Atlas of New Castle County, 1863

**Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware**

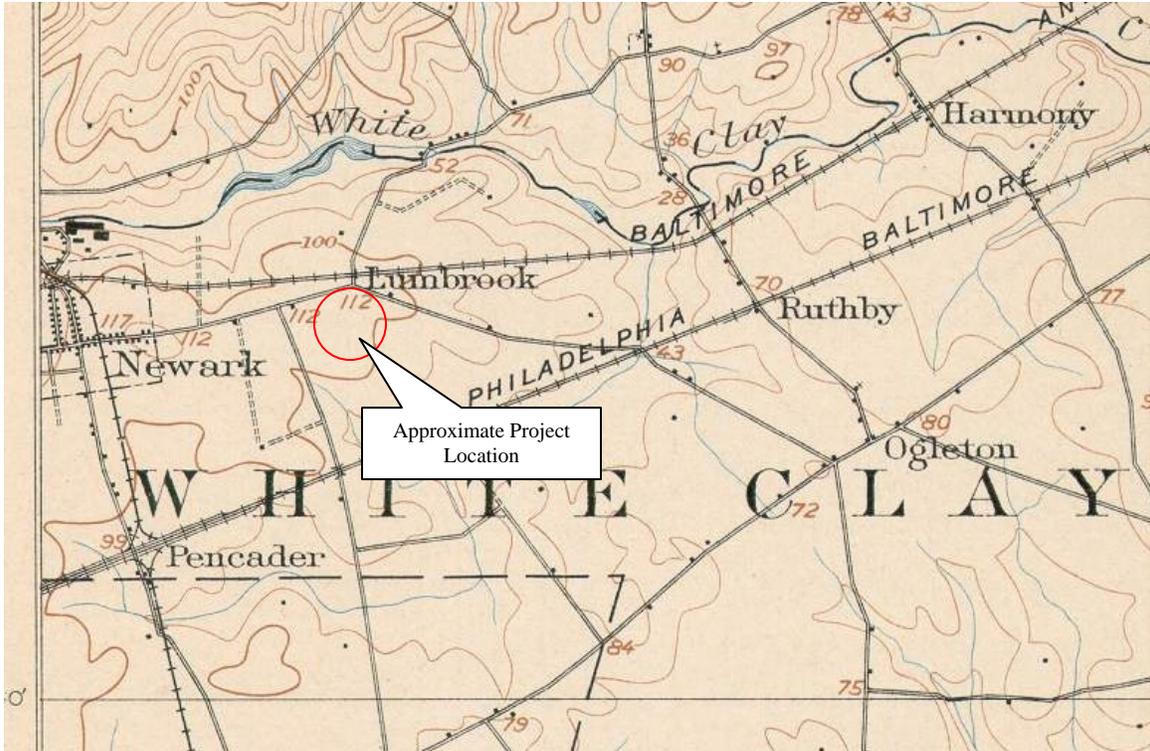


Figure 4: USGS Map from 1906, Wilmington Quadrangle

**Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware**



Photograph 1: View South of Frontage of Box Plant Building



Photograph 2: View West of STP Excavations, Tests A1 and B1

Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware

**STP SUMMARY TABLE**

<b>Test</b>	<b>Location</b>	<b>Find</b>
A1	Northeastern yard area	1 fragment of whiteware
A1b	Northeastern yard area	None
A1c	Northeastern yard area	None
A1d	Northeastern yard area	None
A2	Northeastern yard area	None
A3	Northeastern yard area	None
A4	Northeastern yard area	None
A5	Northeastern yard area	None
A6	Northeastern yard area	None
A7	Northeastern yard area	None
A8	Northeastern yard area	None
A9	Northeastern yard area	None
B1	Northeastern yard area	None
B2	Northeastern yard area	None
C1	Southeastern border of parcel, forested	None
C2	Southeastern border of parcel, forested	None
C3	Southeastern border of parcel, forested	None
C4	Southeastern border of parcel, forested	None
C5	Southeastern border of parcel, forested	None
D1	Eastern forested area, near tracks	None
D2	Eastern forested area, near tracks	None
D3	Eastern forested area, near tracks	None
D4	Eastern forested area, near tracks	None
E1	Eastern forested area, near tracks	None
E2	Eastern forested area, near tracks	None
E3	Eastern forested area, near tracks	None
E4	Eastern forested area, near tracks	None
E5	Eastern forested area, near tracks	None

**Phase I Archaeological Survey of the  
Armed Forces Reserve Center, Newark, Delaware**

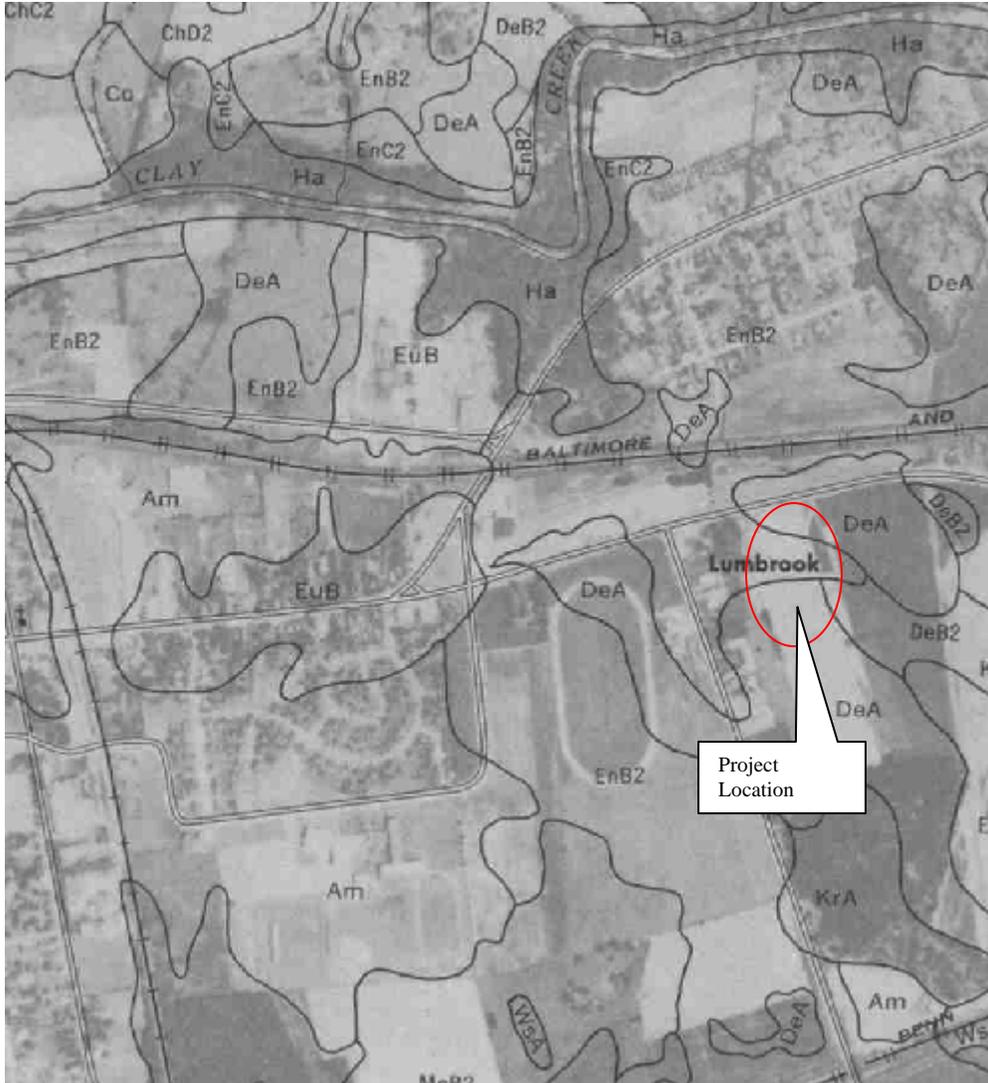


Figure 5: USDA Soil Map of Project Area (1970)

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State of Delaware  
Historical and Cultural Affairs

21 The Green  
Dover, DE 19901-3611

Phone: (302) 736.7400

Fax: (302) 739.5660

REC  
20 Jan 2009

**FINDING OF NO HISTORIC PROPERTIES AFFECTED**

Review Code: 2009.01.12.05

Agency: Department of the Army

Project: Construction of Armed Forces Reserve Center  
1001 Ogletown Road, Newark, DE

The staff of the State Historic Preservation Office has reviewed the materials submitted regarding the above-cited project. Based on this review, it is our determination that no historic properties which are eligible for or listed in the National Register of Historic Places will be affected by this project.

Timothy A. Slavin  
State Historic Preservation Officer

Reviewed By:

  
Joan N. Larrivee, Architectural Historian  
[joan.larrivee@state.de.us](mailto:joan.larrivee@state.de.us)

Date: 1/16/09



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David W. Pugh  
USACE/SAM/PD-M  
P.O. Box 2288  
Mobile, Alabama 36628-0001

9 January 2009

Ms. Sherry White  
Stockbridge Munsee Tribe  
P.O. Box 70  
N8510 Moh-He-Con-Nuck Rd.  
Bowler, WI 54416

Subject: Intergovernmental and Interagency Coordination of Environmental  
Planning (IICEP) for the Construction of an Armed Forces Reserve Center  
(AFRC) in Newark, Delaware

Dear Mrs. White:

The Department of the Army (DA) is preparing an Environmental Assessment (EA) for the proposed construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware. On September 8, 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended to close the Major Robert Kirkwood United States Army Reserve Center (USARC) and its organizational maintenance shop in Newark, DE, and re-locate units to a new AFRC in Newark, DE capable of accommodating Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE, if the DA is able to acquire suitable land for construction of the facilities. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. To implement these recommendations, the DA is proposing to purchase a portion or all of an approximately 20-acre, privately-owned parcel of property at 1001 Ogletown Road in Newark, DE to construct the new facilities (see Enclosure 1).

The EA will analyze and document potential environmental effects associated with the DA's proposed realignment actions in Newark, DE. The EA is being prepared in strict accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508); and Environmental Analysis of Army Actions (32 CFR Part 651).

The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

In accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA), an evaluation of the potential impacts associated with implementing this action is required. To support the evaluation a Phase I cultural resource survey of the entire 20-acre receiving site was conducted in November 2008. The survey followed the standards of the 1993 *Guidelines for Architectural and Archaeological Surveys in Delaware*. Based on the results of the Phase I cultural resource survey and the historically disturbed nature of the proposed site, it is believed that the proposed action will not effect any cultural resources. Enclosed is a copy of the draft report *Phase I Archaeological Survey of the Armed Forces Center, Newark, Delaware* by Louis Berger Group, for your review and comments.

The property at 1001 Ogletown Road in Newark, DE is currently occupied by the former Temple Inland Newark Box Plant. The plant complex consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985. The buildings do not meet the National Register of Historic Places (NRHP) requirement of 50 years of age or more. In addition, the buildings do not possess significance in regards to historic events, architecture, or important persons to warrant NRHP eligibility under Criteria Consideration G: Properties that Have Achieved Significance Within the Past Fifty Years.

Most of the project area has been previously disturbed by the construction of the factory building and associated infrastructure, but approximately five acres of land appeared undisturbed by modern construction, and these areas were tested for archaeological remains. A total of five transects consisting of twenty eight shovel tests were completed along with a visual inspection of the entire property. No archaeological remains were recovered or identified during the survey.

We understand that although the Stockbridge Munsee Tribe does not now reside in Delaware, the Stockbridge Munsee Tribe does maintain an interest in this area and we welcome your input; a response within 30-calender days of receipt of this letter would be appreciated.

Thank you in advance for your cooperation in this matter. If there are any questions or if there is a need for additional information, please contact David W. Pugh at (251)694-3761 or david.w.pugh@usace.army.mil.

Sincerely,



David W. Pugh

Enclourse

CC: Ms Garrett, 99 Soldiers Way, Coraopolis, PA 15108;  
Ms Sue Hotham, BRAC NEPA Support Team, USACE, New England District, 696  
Virginia Rd. Concord, MA 01742

# Stockbridge-Munsee Tribal Historic Preservation Office

Sherry White - Tribal Historic Preservation Officer

W13447 Camp 14 Road

P.O. Box 70

Bowler, WI 54416

January 13, 2009

David W. Pugh  
USACE/SAM/PD-M  
PO Box 2288  
Mobile, AL 36628-0001

RE: Environmental Planning HCEP for construction of an Armed Forces Reserve Center in Newark, Delaware

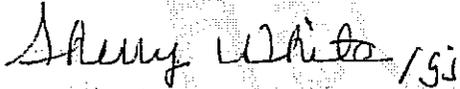
Dear Mr. Pugh:

Thank you for contacting the Stockbridge-Munsee Tribe regarding the above referenced projects. The Tribe is committed to protecting archaeological sites that are important to tribal heritage, culture and religion. Furthermore, the Tribe is particularly concerned with archaeological sites that may contain human burial remains and associated funerary objects.

As described in your correspondence, the proposed ground disturbing activity of these projects is not in a region of archaeological interest to the Stockbridge-Munsee Tribe.

We appreciate your cooperation in notifying the Historic Preservation Office. Should you have any questions, feel free to contact me.

Sincerely,



Sherry White,  
Tribal Historic Preservation Officer

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David W. Pugh  
USACE/SAM/PD-M  
P.O. Box 2288  
Mobile, Alabama 36628-0001

9 January 2009

Mr. Edgar L. French  
Delaware Nation  
P.O. Box 825  
Anadarko, OK 73005

Subject: Intergovernmental and Interagency Coordination of Environmental  
Planning (IICEP) for the Construction of an Armed Forces Reserve Center  
(AFRC) in Newark, Delaware

Dear Mr. French:

The Department of the Army (DA) is preparing an Environmental Assessment (EA) for the proposed construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware. On September 8, 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended to close the Major Robert Kirkwood United States Army Reserve Center (USARC) and its organizational maintenance shop in Newark, DE, and re-locate units to a new AFRC in Newark, DE capable of accommodating Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE, if the DA is able to acquire suitable land for construction of the facilities. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. To implement these recommendations, the DA is proposing to purchase a portion or all of an approximately 20-acre, privately-owned parcel of property at 1001 Ogletown Road in Newark, DE to construct the new facilities (see Enclosure 1).

The EA will analyze and document potential environmental effects associated with the DA's proposed realignment actions in Newark, DE. The EA is being prepared in strict accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508); and Environmental Analysis of Army Actions (32 CFR Part 651).

The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

In accordance with NEPA and Section 106 of the National Historic Preservation Act (NHPA), an evaluation of the potential impacts associated with implementing this action is required. To support the evaluation a Phase I cultural resource survey of the entire 20-acre receiving site was conducted in November 2008. The survey followed the standards of the 1993 *Guidelines for Architectural and Archaeological Surveys in Delaware*. Based on the results of the Phase I cultural resource survey and the historically disturbed nature of the proposed site, it is believed that the proposed action will not effect any cultural resources. Enclosed is a copy of the draft report *Phase I Archaeological Survey of the Armed Forces Center, Newark, Delaware* by Louis Berger Group, for your review and comments.

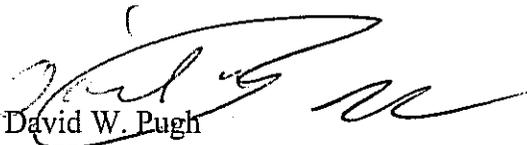
The property at 1001 Ogletown Road in Newark, DE is currently occupied by the former Temple Inland Newark Box Plant. The plant complex consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985. The buildings do not meet the National Register of Historic Places (NRHP) requirement of 50 years of age or more. In addition, the buildings do not possess significance in regards to historic events, architecture, or important persons to warrant NRHP eligibility under Criteria Consideration G: Properties that Have Achieved Significance Within the Past Fifty Years.

Most of the project area has been previously disturbed by the construction of the factory building and associated infrastructure, but approximately five acres of land appeared undisturbed by modern construction, and these areas were tested for archaeological remains. A total of five transects consisting of twenty eight shovel tests were completed along with a visual inspection of the entire property. No archaeological remains were recovered or identified during the survey.

We understand that although the Delaware Nation does not now reside in Delaware, the Delaware Nation does maintain an interest in this area and we welcome your input; a response within 30-calender days of receipt of this letter would be appreciated.

Thank you in advance for your cooperation in this matter. If there are any questions or if there is a need for additional information, please contact David W. Pugh at (251)694-3761 or david.w.pugh@usace.army.mil.

Sincerely,



David W. Pugh

Enclosure

CC: Ms Garrett, 99 Soldiers Way, Coraopolis, PA 15108  
Ms Sue Hotham, BRAC NEPA Support Team, U.S. Army Corps of Engineers,  
New England District, 696 Virginia Rd. Concord, MA 01742



**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND  
5231 SOUTH SCOTT PLAZA  
FORT DIX, NEW JERSEY 08640-5000



REPLY TO  
ATTENTION OF

January 20, 2009

U.S. Fish and Wildlife Service  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) for the Construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware

To Whom It May Concern:

The Department of the Army (DA) is preparing an Environmental Assessment (EA) for the proposed construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware. On September 8, 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended to close the Major Robert Kirkwood United States Army Reserve Center (USARC) and its organizational maintenance shop in Newark, DE, and re-locate units to a new AFRC in Newark, DE capable of accommodating Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE, if the DA is able to acquire suitable land for construction of the facilities. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. To implement these recommendations, the DA is proposing to purchase a portion or all of an approximately 20-acre, privately-owned parcel of property at 1001 Ogletown Road in Newark, DE to construct the new facilities (see Enclosure 1).

The EA will analyze and document potential environmental effects associated with the DA's proposed realignment actions in Newark, DE. The EA is being prepared in strict accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508); and Environmental Analysis of Army Actions (32 CFR Part 651).

The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle

Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

Currently, the proposed site is occupied by the former Temple Inland Newark Box Plant which consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985.

We are initiating this consultation in accordance with NEPA and the Endangered Species Act to evaluate the potential impacts (both beneficial and adverse) of implementing the proposed action. Based on information available we do not anticipate that the project will impact any federally listed species, migratory birds, or wetlands. Please confirm that no federally endangered, threatened or candidate species or critical habitat occur in the project area and that no additional or formal consultation under Section 7 of the Endangered Species Act is necessary.

Thank you in advance for your cooperation in this matter. If there are any questions or if there is a need for additional information, please contact:

Mona Garrett  
Base Transition Coordinator  
(412) 604-8168  
[Mona.Garrett@usar.army.mil](mailto:Mona.Garrett@usar.army.mil)

Please provide any comments within 30 calendar days from day of receipt of this letter.

Sincerely,

  
JOSEPH H. LEDLOW  
Colonel, US Army Reserve  
Regional Engineer

Enclosure: Project Location Map



**DEPARTMENT OF THE ARMY**  
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND  
5231 SOUTH SCOTT PLAZA  
FORT DIX, NEW JERSEY 08640-5000



REPLY TO  
ATTENTION OF

January 20, 2009

Environmental Review/Information Request  
Delaware Natural Heritage Program  
Division of Fish and Wildlife  
4876 Hay Point Landing Road  
Smyrna, Delaware 19977

Subject: Intergovernmental and Interagency Coordination of Environmental Planning (IICEP) for the Construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware

To Whom It May Concern:

The Department of the Army (DA) is preparing an Environmental Assessment (EA) for the proposed construction of an Armed Forces Reserve Center (AFRC) in Newark, Delaware. On September 8, 2005, the Defense Base Closure and Realignment Commission ("BRAC Commission") recommended to close the Major Robert Kirkwood United States Army Reserve Center (USARC) and its organizational maintenance shop in Newark, DE, and re-locate units to a new AFRC in Newark, DE capable of accommodating Delaware Army National Guard (DEARNG) units from the William Nelson Armory in Middletown, DE, if the DA is able to acquire suitable land for construction of the facilities. These recommendations were approved by the President on September 23, 2005, and forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. To implement these recommendations, the DA is proposing to purchase a portion or all of an approximately 20-acre, privately-owned parcel of property at 1001 Ogletown Road in Newark, DE to construct the new facilities (see Enclosure 1).

The EA will analyze and document potential environmental effects associated with the DA's proposed realignment actions in Newark, DE. The EA is being prepared in strict accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.); the Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508); and Environmental Analysis of Army Actions (32 CFR Part 651).

The proposed AFRC would provide an approximately 80,994 square foot (SF) 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include an approximately 8,050 SF Vehicle Maintenance Shop (VMS) and an approximately 1,361 SF unheated storage building. In

addition, there would be approximately 4.28 acres of paved areas including approximately 2.47 acres of military equipment parking (MEP) areas and approximately 1.81 acres of privately-owned vehicle (POV) parking areas, walkways, and access roads.

Currently, the proposed site is occupied by the former Temple Inland Newark Box Plant which consists of four industrial buildings constructed in 1965 and one prefabricated building dating from circa 1985.

We are initiating this consultation in accordance with NEPA to evaluate the potential impacts (both beneficial and adverse) of implementing the proposed action. Based on information available we do not anticipate that the project will impact any state or federally listed species or critical habitat, migratory birds, or wetlands. We seek confirmation from the Delaware Division of Fish and Wildlife that this BRAC-related action in Newark, DE will not adversely impact any of the trust resources of the State of Delaware.

If there are any questions or if there is a need for additional information, please contact :

Mona Garrett  
Base Transition Coordinator  
(412) 604- 8168  
[Mona.Garrett@usar.army.mil](mailto:Mona.Garrett@usar.army.mil)

Please provide any comments within calendar days from day of receipt of this letter.

Sincerely,

  
JOSEPH H. LEDLOW  
Colonel, US Army Reserve  
Regional Engineer

Enclosure: Project Location Map

**APPENDIX C— ECONOMIC IMPACT  
FORECAST SYSTEM (EIFS) MODEL**

## **SOCIOECONOMIC IMPACT ASSESSMENT**

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls, local procurement of goods and services, and construction projects all contribute to the economic base of the region of influence (ROI). In this regard, changes at Newark, DE, per the Proposed Action, would have a multiplier effect on the local and regional economy. With the Proposed Action, direct jobs would be created, generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services.

### **THE ECONOMIC IMPACT FORECAST SYSTEM**

The U.S. Army, with the assistance of many academic and professional economists and regional scientists, developed the Economic Impact Forecast System (EIFS) to address the economic impacts of actions requiring analysis under the National Environmental Policy Act (NEPA) and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS is used in NEPA assessments for a number of Army BRAC NEPA documents. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS was developed under a joint project of the U.S Army Corps of Engineers (USACE), the U.S. Army Environmental Policy Institute (AEPI), and the Computer and Information Science Department of Clark Atlanta University, Georgia. EIFS is an on-line system, and the EIFS Web application is hosted by the USACE, Mobile District. The system is available to anyone with an approved user-id and password. University staff and the staff of USACE, Mobile District is available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to define an economic ROI by identifying the counties, parishes, or cities to be analyzed. Once the ROI is defined, the system aggregates the data, calculates multipliers and other variables used in the various models in EIFS, and prompts the user for forecast input data.

### **THE EIFS MODEL**

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to basic economic activity. Basic, in this context, is defined as the production or employment

engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating aggregate impacts and makes the economic base model ideal for the EA and EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its base sector; for example, a dollar increase in local expenditures due to an expansion of its military installation. EIFS estimates its multipliers using a location quotient approach based on the concentration of industries within the region relative to the industrial concentrations for the nation.

The user inputs into the model the data elements which describe the U.S. Army action: the change in expenditures, or dollar volume of the construction project(s); change in civilian or military employment; average annual income of affected civilian or military employees; the percent of civilians expected to relocate due to the U.S. Army's action; and the percent of military living on-post. Once these are entered into the EIFS model, a projection of changes in the local economy is provided. These are projected changes in sales volume, income, employment, and population. These four indicator variables are used to measure and evaluate socioeconomic impacts. Sales volume is the direct and indirect change in local business activity and sales (total retail and wholesale trade sales, total selected service receipts, and value-added by manufacturing). Employment is the total change in local employment due to the proposed action, including not only the direct and secondary changes in local employment, but also those personnel who are initially affected by the military action. Income is the total change in local wages and salaries due to the proposed action, which includes the sum of the direct and indirect wages and salaries, plus the income of the civilian and military personnel affected by the proposed action. Population is the increase or decrease in the local population as a result of the proposed action.

## **THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS**

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the significance of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, income, employment, and population. These evaluations identify the positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the

historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

		<b>Increase</b>	<b>Decrease</b>
Sales Volume	X	100%	75%
Income	X	100%	67%
Employment	X	100%	67%
Population	X	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary, but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansion.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact model, in combination with the RTV, has proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

# APPENDIX D— AIR QUALITY APPLICABILITY ANALYSIS

## GENERAL CONFORMITY APPLICABILITY ANALYSIS

This air quality applicability analysis was conducted to identify potential increases or decreases in criteria air pollutant emissions associated with the proposed construction of an Armed Forces Reserve Center, in Newark, DE. The project will occur within a U.S. EPA designated moderate non-attainment zone for ozone and non-attainment for PM<sub>2.5</sub> and is subject to the federal conformity requirements. The purpose of the analysis is to apply the Federal General Conformity Rule established in 40 CFR, Part 93 entitled: *Determining Conformity of Federal Actions to State or Federal Implementation Plans* to the Proposed Action alternative in order to determine any effect on air quality.

The federal conformity rules were established to ensure that federal activities do not hamper local efforts to control air pollution. In particular, Section 176(c) of the Clean Air Act (CAA) prohibits federal agencies, departments or instrumentalities from engaging in, supporting, licensing, or approving any action, in an area that is in non-attainment of the National Ambient Air Quality Standards (NAAQS), which does not conform to an approved state or federal implementation plan. Therefore, the agency must determine whether or not the project would interfere with the clean air goals in the State Implementation Plan (SIP).

### 1.0 PROJECT DESCRIPTION

The Proposed Action is to acquire sufficient and suitable land to construct a new AFRC and associated support facilities to support four Army Reserve units relocating from the Major Robert Kirkwood Memorial U.S. Army Reserve Center (USARC), as well as two Delaware Army National Guard (DEARNG) units relocating from the William Nelson Armory in Middletown, DE. The proposed AFRC would require a minimum of 9.5 acres of land in Newark, DE, which would be acquired by the Army, to provide a 400-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for four Army Reserve units and two DEARNG units. Associated support facilities include a Vehicle Maintenance Shop (VMS) and an unheated storage building.

Supporting improvements proposed to complement the AFRC and associated facilities include paving, fencing, the extension of utilities to service the project, and general site improvements. AT/FP safety and security measures, including minimum stand-off distance from roads, parking areas and vehicle unloading areas, would be incorporated into the facility designs and siting, and accessibility for disabled persons would also be provided (U.S. Army, 2008a).

The approximate size of the AFRC and associated buildings is estimated as approximately 81,000 SF, and 8,000 SF and 1,300 SF, respectively, for the VMS and unheated storage facilities. The associated parking is estimated at 4.28 acres.

## **2.0 METEOROLOGY/CLIMATE**

Temperature is a parameter used in calculations of emissions for air quality applicability. The climate in New Castle County, DE varies seasonally. The average summer high temperature in New Castle County, which includes the project site, is 88 degrees Fahrenheit (F) and the average winter low temperature is 23 degrees F (TWC, n.d).

## **3.0 CURRENT AMBIENT AIR QUALITY CONDITIONS**

New Castle County, DE is part of the Philadelphia-Wilmington-Trenton airshed and has been classified by the U.S EPA as being in moderate non-attainment for the criteria pollutant ozone, and in non-attainment for the criteria pollutant PM<sub>2.5</sub>.

## **4.0 AIR QUALITY REGULATORY REQUIREMENTS**

The U.S. EPA defines ambient air in 40 CFR Part 50 as “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Clean Air Act Amendments (CAAA), the U.S. EPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the U.S. EPA has issued NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particles with a diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), particles with a diameter less than or equal to a nominal 2.5 micrometers (PM<sub>2.5</sub>), ozone (O<sub>3</sub>), nitrogen oxides (NO<sub>x</sub>), and lead (Pb). Areas that do not meet NAAQS are called non-attainment areas.

The NAAQS for ozone and PM<sub>2.5</sub> are in Table D-1.

**Table D-1: Ambient Air Quality Standards for Ozone and PM2.5**

Pollutant	Federal Standard	Delaware Standard <sup>2</sup>
Ozone (O <sub>3</sub> ) <sup>1</sup> 8-Hour Average	0.075 ppm	0.075 ppm
Particulate Matter (PM <sub>2.5</sub> ) <sup>1</sup> 24-Hour Average	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
Annual Arithmetic Mean	15 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>

<sup>1</sup> Federal primary and secondary standards for this pollutant are identical.  
Sources: U.S. EPA, 2008a; DNREC, 1999

To regulate the emission levels resulting from a project, federal actions located in non-attainment areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93 *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule). The project area is located within a non-attainment area; therefore, a General Conformity Rule applicability analysis is warranted.

Section 93.153 of the Rule sets applicability requirements for projects subject to the Rule through establishment of *de minimis* levels for annual criteria pollutant emissions. These *de minimis* levels are set according to criteria pollutant non-attainment area designations. Projects below the *de minimis* levels are not subject to the Rule. Those at or above the levels are required to perform a conformity analysis as established in the Rule. The *de minimis* levels apply to direct and indirect sources of emissions that can occur during the construction and operation phases of the action.

Direct emissions are those caused by or initiated by the federal action that occur at the same time and place as the action. Indirect emissions are those caused by the action, but which occur later in time and/or at a distance removed from the action itself, yet are reasonably foreseeable and the federal agency responsible for the action can maintain control as part of the actions program responsibility. Emissions are estimated for the ozone precursor pollutants nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC). Annual emissions for these compounds were estimated for the project to determine if it would be below or above the *de minimis* levels established in the Rule. The *de minimis* levels for moderate non-attainment areas for ozone in an ozone transport region is 100 tons per year (TPY) for NO<sub>x</sub> and 50 TPY for VOC.

On July 11, 2006 U.S. EPA established *de minimis* levels for PM<sub>2.5</sub>. The final rule established 100 TPY as the *de minimis* emission level under nonattainment for directly emitted PM<sub>2.5</sub> and each of the precursors that form it (sulfur dioxide (SO<sub>2</sub>), NO<sub>x</sub>, VOC, and ammonia). This 100 TPY threshold

applies separately to each precursor. This means that if an action's direct or indirect emissions of PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, or ammonia exceed 100 TPY, a General Conformity determination would be required. However, neither U.S. EPA nor Delaware have found PM<sub>2.5</sub> problems in the region to be caused by VOC or ammonia and ammonia is not further addressed by the EA (VOC is addressed as an ozone precursor).

In addition to evaluating air emissions against *de minimis* levels, emissions were also evaluated for regional significance. A federal action that does not exceed the threshold emission rates of criteria pollutants may still be subject to a general conformity determination if the direct and indirect emissions from the action exceed ten percent of the total emissions inventory for a particular criteria pollutant in a non-attainment or maintenance area. If the emissions exceed this ten percent threshold, the federal action is considered to be a "regionally significant" activity, and thus, the general conformity rules apply.

## **5.0 CONFORMITY APPLICABILITY ANALYSIS**

This project construction- and operations-related General Conformity analysis was performed for the proposed action in Newark, DE. This conformity analysis and air emissions evaluation will follow the criteria regulated in *40 CFR Parts 6, 51, and 93, Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* (November 30, 1993).

### **5.1 CONSTRUCTION PHASE EMISSIONS**

Construction emissions would result from the operation of heavy equipment and the painting of the building structures and parking spaces. The project would utilize a mix of heavy equipment for demolition and construction, mainly associated with preparing the site for the buildings and utility relocation.

#### **5.1.1 Emissions from Heavy Equipment**

Annual emissions were calculated for various types of diesel construction vehicles using model emission rate input for the year 2010 in U.S. EPA's *Nonroad2005 Emission Inventory Model: Diesel Construction Equipment, New Castle County, Delaware* (USEPA, 2005). Truck emission levels were calculated using EPA's *MOBILE6* model for an average temperature of 55 degrees F (USEPA 2006). The total annual emissions, in tons per year were determined for each vehicle based on the number of vehicles used and the number of operating hours per year. While the expected construction period is two years, this analysis assumes a one year construction timeframe for a more conservative analysis.

Emissions factors used for construction vehicles are shown in Table D-2. It was assumed that delivery trucks would travel 20 miles per trip, making three trips a day, for a total of 60 miles a day. The pick-up truck would travel 10 miles per day, used primarily in job management. Water tankers were assumed to travel 20 miles per day supporting earth operations, and dump trucks were assumed to make two-34-mile round trips per day for a total of 68 miles per day.

**Table D-2: Emissions Factors for Construction Vehicles**

Construction Vehicle Type	Emissions Factors lbs/hr-vehicle			
	NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
Front End Loader	2.750	0.205	0.205	0.496
Excavator	2.946	0.156	0.190	0.529
Dozer	3.058	0.302	0.382	0.551
Pneumatic Tire Roller	0.898	0.094	0.115	0.156
Steel Wheel Roller	0.898	0.094	0.115	0.156
Asphalt Paver	1.214	0.098	0.106	0.215
Vibratory Roller	1.392	0.112	0.120	0.240
Grader	1.419	0.115	0.128	0.265
Concrete Pumper Truck	1.990	0.150	0.148	0.331
Concrete Truck	1.990	0.150	0.148	0.331
Crane	1.014	0.076	0.065	0.164
Backhoe	1.439	0.343	0.269	0.213
Water Tanker*	6.033	0.285	0.160	0.003
Dump Truck*	6.033	0.285	0.160	0.003
Pick-Up Truck*	0.743	1.166	0.011	0.007
Delivery Truck (Medium)*	2.289	1.533	0.042	0.017
Delivery Truck (Heavy)*	0.650	0.361	0.061	0.006
Air Compressor	0.591	0.062	0.058	0.093

\* Units are in grams/mile/vehicle

### ***5.1.1.1 Calculations for Construction Emissions***

#### **Equipment and Vehicle Emissions**

Using the emissions factors in Table D-2, construction emissions were calculated for the proposed construction at Newark, DE. Using the assumptions described above, the emissions in tons of NO<sub>x</sub>, VOC, SO<sub>2</sub> and PM<sub>2.5</sub> for construction and demolition were calculated for each vehicle type using the appropriate equations displayed in Table D-3.

**Table D-3: Equations for Construction Emissions Calculations**

<b>Emission Source</b>	<b>Equation</b>	<b>Sample Calculation</b>
Heavy Equipment Emissions, On-Site Activities	(# of vehicle type) (Emission factor) (Total # of days in operation) (percent usage) (hours/day) (1 ton/2000 lbs) = tons of air emissions	(1 grader) (1.419lbs/hr/vehicle) (11 days in operation) (100% usage) (8 hours/day) (1 ton/2000 lbs) = 0.064 tons of NO <sub>x</sub> of equipment emissions
Construction Truck Emissions with Vehicle-miles	(# vehicle type) (Emission factor) (Total # of days in operation) (miles/day)(1 ton/2000 lbs) = tons of air emissions	(1 dump truck) (6.033 grams/mile/vehicle) (16 days)(68 miles/day)(1 lb/453.59 grams) (1 ton/2000 lb) = 0 .01 tons NO <sub>x</sub> of vehicle emissions

**Surface Disturbance (Fugitive PM<sub>2.5</sub>)**

The quantity of dust emissions of PM<sub>2.5</sub> from construction operations is assumed proportional to the days of construction activity on unpaved surfaces. The following sources for emission factors, with a capture fraction of 50 percent and silt and moisture contents of 20 percent, were used in PM<sub>2.5</sub> emission calculations for fugitive emissions (USEPA, 2006).

- The unpaved road equation 13.2.2.1 equation 1a (AP-42 Chapter 13.2.2) is used to estimate fugitive emissions for the concrete pumper truck, concrete truck, crane, water truck, dump truck pickup truck, and delivery truck. Mileage on unpaved surface for each day of operation by vehicle type is estimated, then multiplied by the number of construction days.
- Front end loader and backhoe emissions combine unpaved road travel from equation 13.2.2.1 equation 1a and the dumping equation from AP-42 Chapter 11, Chapter 11.9-4.
- Dozer, pneumatic tire roller, and vibratory roller emissions are based on the dozer equation from AP-42 Chapter 11, Table 11.9-1.
- Grader emissions are based on the grader equation from AP-42 Chapter 11, Table 11.9-1.

Resultant emission rates in lbs/day are presented in Table B-4.

**Table B-4: Fugitive PM<sub>2.5</sub> Emission Factors for Construction Vehicles**

<b>Equipment/Vehicle Type</b>	<b>Fugitive PM<sub>2.5</sub> (lb/day)</b>	<b>Equipment/Vehicle Type</b>	<b>Fugitive PM<sub>2.5</sub> (lb/day)</b>
Front End Loader	4.49	Concrete Pumper Truck	1.16
Dozer	1.77	Concrete Truck	1.16
Pneumatic Tire Roller	0.89	Water Tanker	13.39
Vibratory Roller	0.89	Dump Truck	11.16
Grader	0.01	Pick-Up Truck	2.64
Backhoe	2.25	Delivery Truck (Medium)	5.44

Equipment/Vehicle Type	Fugitive PM <sub>2.5</sub> (lb/day)	Equipment/Vehicle Type	Fugitive PM <sub>2.5</sub> (lb/day)
Crane	1.00	Delivery Truck (Heavy)	7.44

### 5.1.1.2 Preferred Alternative – Ogletown Road

Equipment requirements were estimated for the construction activities associated with site preparation for buildings, construction of the parking, and trenching for utilities.

Table D-5 provides the equipment assumptions and resultant total equipment emissions for the Preferred Alternative site.

**Table D-5: Emissions for Construction Equipment – Preferred Alternative**

Construction Vehicle Type	Vehicle Days of Operation	Total Annual Emissions – TPY				
		NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	Fugitive PM <sub>2.5</sub>	SO <sub>2</sub>
Front End Loader	3.095	0.231	0.231	0.633	0.558	3.095
Excavator	0.080	0.004	0.005	0.000	0.014	0.080
Dozer	1.867	0.185	0.233	0.135	0.336	1.867
Pneumatic Tire Roller	0.009	0.001	0.001	0.001	0.002	0.009
Steel Wheel Roller	0.019	0.002	0.002	0.000	0.003	0.019
Asphalt Paver	0.658	0.069	0.065	0.000	0.103	0.658
Vibratory Roller	0.317	0.025	0.027	0.082	0.055	0.317
Grader	0.289	0.023	0.026	0.000	0.053	0.289
Concrete Pumper Truck	0.669	0.051	0.050	0.049	0.111	0.669
Concrete Truck	1.592	0.120	0.119	0.116	0.265	1.592
Crane	1.107	0.083	0.071	0.136	0.617	1.107
Backhoe	0.029	0.007	0.005	0.006	0.004	0.029
Water Tanker	0.000	0.000	0.000	0.015	0.000	0.000
Dump Truck	0.159	0.008	0.004	1.961	0.000	0.159
Pick-Up Truck	0.002	0.003	0.000	0.317	0.000	0.002
Delivery Truck (Medium)	0.036	0.024	0.001	0.653	0.000	0.036
Delivery Truck (Heavy)	0.010	0.006	0.001	0.893	0.000	0.010
Air Compressor	1.554	0.163	0.153	0.000	0.243	1.554
<b>Total Emissions</b>		<b>11.492</b>	<b>1.004</b>	<b>0.995</b>	<b>4.997</b>	<b>2.366</b>

### 5.1.2 Emissions from Painting Activities

Emissions from painting parking spaces painting were based on four-inch wide stripes. It was assumed that the average parking space would be 9 feet wide by 19 feet long and every two parking spaces would share a common line. Approximately 10 square feet would be painted for every parking space. For parking spaces, it was assumed that alkyd paint would be used with a VOC content of three pounds per gallon and one gallon of paint covers approximately 200 square feet. One coat of paint would be applied to the parking surfaces. Total VOC emissions from parking spaces would be 0.05 tons.

It was assumed that three coats of paint (one primer and two finishes) of water-based latex paint with a VOC content of one pound per gallon (one gallon of paint covers approximately 300 square feet) would be applied to approximately 160,000 square feet of interior surfaces. These values assume the interior space consists of rooms with drop ceilings or other surfaces not requiring paint and a ratio of walls needing paint to floor space of 2 to 1. Based on these assumptions, approximately 1,600 gallons of paint would be needed for the Proposed Action. Total interior painting for buildings would be expected to create approximately 0.80 tons of VOC emissions.

### 5.1.3 Summary of Construction Emissions

After the emissions analysis was performed for all aspects of construction (which includes demolition activities as well), the totals were added to determine the combined construction emissions. Table D-6 displays a summary of the results.

**Table D-6: Total Emissions for Construction – Preferred Alternative**

Construction Activity	Total Annual Emissions – TPY			
	NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
Use of Heavy Equipment	11.492	1.004	5.991	2.366
Painting	N/A	0.853	N/A	N/A
Total Emissions from Construction	<b>11.492</b>	<b>1.206</b>	<b>5.991</b>	<b>2.366</b>

## 5.2 OPERATIONAL EMISSIONS

This section analyzes operational emissions from building heating sources, generators, and new commuters.

### 5.2.1 Heating Source Emissions

Designs for the proposed facilities have not yet been prepared; therefore, actual boiler or furnace types and sizes have not been determined. Operational heating requirements for the EA analysis are based on

the most recent Commercial Buildings Energy Consumption Survey (CBECS) in 2003 conducted by the Department of Energy, Energy Information Administration. Table C30 from this document indicates that the average energy intensity for buildings using natural gas in climate zone 3, which includes New Castle County, DE (DOE, 2003). The average intensity for office space in zone 3 is 30.1 standard cubic feet of natural gas per square foot (SCF/SF) annually. The average intensity for warehouse/storage, as assumed for the VMS, is 30.7 SCF/SF.

Water heating is assumed to be included in these estimates or provided electrically.

The AFRC space heating for 81,000 SF of office space and 8,000 SF warehouse/storage space requires annually:

- $(81,000 \text{ SF})(30.1 \text{ SCF/SF}) + (8,000 \text{ SF})(30.7 \text{ SCF/SF}) = 2.68 \text{ million SCF annually}$

The new buildings to be constructed are assumed to be heated by a small boiler that operates at less than 100 million Btu per hour. Operational heating emissions are based on the USEPA's *AP-42 Fifth Edition, Compilation of Air Pollution Emission Factors Volume I, Chapter 1: Stationary Sources, Supplement E* (EPA, 1998a).

The following natural gas emission rates are assumed:

- $\text{NO}_x = 100 \text{ lb}/10^6 \text{ SCF}$
- $\text{VOC} = 5.5 \text{ lb}/10^6 \text{ SCF}$
- $\text{PM}_{2.5} = 7.6 \text{ lb}/10^6 \text{ SCF}$
- $\text{SO}_2 = 0.6 \text{ lb}/10^6 \text{ SCF}$

Given these assumptions the annual heating emissions at full operation are available in Table D-7.

**Table D-7: Annual Heating Emissions**

Total Annual Emissions – TPY			
NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
0.134	0.007	0.010	0.001

### 5.2.2 Vehicle Emissions from Daily Commuters

Vehicle emissions from commuter vehicles are not included in this analysis. All incoming units are from within the Philadelphia-Wilmington-Trenton airshed and therefore there would be no net increase in commuter emissions as a result of the Proposed Action.

### 5.2.3 Emissions from Generators

For the emergency generators, EPA's *Report No. NR-009A Exhaust Emission Factors for Nonroad Engine Modeling – Compression-Ignition* was used to determine NO<sub>x</sub>, VOC, SO<sub>2</sub> and PM<sub>2.5</sub> emissions. No specification was given as to the size of the generator, so it was assumed that it would be a Tier 3 generator at 150 kW (200 hp). Given these assumptions, resulting NO<sub>x</sub> emission rates are 2.37 g/hp-hr, VOC emission rates of 0.042 g/hp-hr, PM<sub>2.5</sub> emission rates are 0.06 g/hp-hr, and SO<sub>2</sub> emission rates of 0.14 g/hp-hr. These emission factors were used, assuming that the generators operated at maximum horsepower for a total of 500 hours per year. The 500 hours include up to 10 hours per month of scheduled tests plus an allowance for emergency use. Using these assumptions, the annual emissions of NO<sub>x</sub>, VOC, PM<sub>2.5</sub> and SO<sub>2</sub> were calculated to be 0.263 TPY NO<sub>x</sub>, 0.005 TPY VOC, 0.007 TPY PM<sub>2.5</sub> and 0.016 TPY SO<sub>2</sub>.

### 5.2.4 Summary of Operation Emissions

Operational emissions include emissions from heating the building space and water and generator use. Table D-8 combines all operational emissions.

**Table D-8: Total Emissions from Operations**

Operational Activity	Total Annual Emissions – TPY			
	NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
Heating	0.134	0.007	0.010	0.001
Generator	0.263	0.005	0.007	0.016
Total	<b>0.397</b>	<b>0.012</b>	<b>0.017</b>	<b>0.016</b>

## 5.3 EMISSIONS FROM CONSTRUCTION AND OPERATIONS

Construction and operations emissions for the Preferred alternative are shown in Table D-9. This table also compares results to *de minimis* standards. Federal *de minimis* standards are based on the 8-hour ozone and PM<sub>2.5</sub> nonattainment determination.

The results in Table D-9 show that the emissions associated with constructing and operating the proposed facilities, when compared to the *de minimis* values for this moderate ozone non-attainment

area and PM<sub>2.5</sub> nonattainment area, fall well below the Federal *de minimis* levels of 100 TPY for NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>2.5</sub> and 50 TPY for VOC even under the initial conservative assumptions that were employed.

**Table D-9: Summary of Emissions – Preferred Alternative**

	Total Annual Emissions – TPY			
	NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
<b>Federal <i>de minimis</i> standards</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>100</b>
Construction	11.492	1.206	5.991	2.366
Full Operation	0.397	0.012	0.017	0.016

#### 5.4 REGIONAL SIGNIFICANCE

In addition to *de minimis* values, actions are also evaluated for regional significance. An action is considered to be regionally significant if the annual increase in emissions would make up 10 percent or more of the available regional emission inventory. The *Delaware 2005 Rate-of-Progress Plan for Kent and New Castle Counties* sets forth daily emission targets of 34.814 tons per day of VOC and 85.498 tons per day of NO<sub>x</sub> for point and non-road sources in New Castle County, DE (DNREC, 2000). The increase in annual emissions from the construction and operational activities would not make up 10 percent or more of the available regional emission target for VOC or NO<sub>x</sub> and would not be regionally significant. There is no SIP approved for the newly promulgated PM<sub>2.5</sub> regulations.

#### 5.5 CONCLUSION

The results in Table D-9 shows that the emissions associated with constructing and operating the proposed facilities, when compared to the *de minimis* values for this moderate ozone non-attainment area and PM<sub>2.5</sub> nonattainment area, fall well below the Federal *de minimis* levels of 100 TPY for NO<sub>x</sub>, 50 TPY for VOC, and 100 for PM<sub>2.5</sub> and SO<sub>2</sub> even under the initial conservative assumptions that were employed. Emissions also are not regionally significant. Therefore, a full conformity determination is not required for any of the alternatives. A Record of Non-Applicability (RONA) can be found in Attachment One of this appendix.

## 6.0 REFERENCES

- DOE, 2003 U.S. Department of Energy, Energy Information Administration. *Commercial Buildings Energy Consumption Survey (CBECS)*. 2003.
- DNREC. Delaware Department of Natural Resources and Environmental Control.
- \_\_\_\_\_2000. Delaware Department of Natural Resources and Environmental Control. *Summary of Delaware 2005 Rate-of-Progress Plan for Kent and New Castle Counties*. December 2000.
- \_\_\_\_\_1999. Delaware Department of Natural Resources and Environmental Control. Regulation 3: Ambient Air Quality Standards. September 1999.
- TWC, n.d.. The Weather Channel. "Newark, DE Averages" Available at: [www.weather.com](http://www.weather.com). Accessed on: December 1, 2008.
- USEPA. U.S. Environmental Protection Agency.
- \_\_\_\_\_2008a. U.S. Environmental Protection Agency. *National Primary and Secondary Ambient Air Quality Standards*. 40 CFR Part 50.
- \_\_\_\_\_2008b. U.S. Environmental Protection Agency. AP 42, Fifth Edition. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*
- \_\_\_\_\_2006. U.S. Environmental Protection Agency. 2006. Nonroad2005 Emission Inventory Model: Diesel Construction Equipment, Camden County, New Jersey. Posted 2/10/2006. Model Run 11/21/08.
- \_\_\_\_\_2005. U.S. Environmental Protection Agency. 2005. *MOBILE6 Emission Factor Model, for Trucks year 2008 Vehicle Emissions*.
- \_\_\_\_\_1998. U.S. Environmental Protection Agency. 1998a. *Compilation of Air Pollutant Emission Factors, Volume I, Chapter 1 Supplement D: Stationary Sources, AP-42, 5th edition*.

**ATTACHMENT 1**

**AIR QUALITY RECORD OF NON-APPLICABILITY (RONA)**

## GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY

Project/Action

Name: Implementation of BRAC 05 Realignment at Newark, DE

Project/Action

Point of Contact: Mona Garrett  
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Begin Date: September 23, 2005

End Date: September 15, 2011

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The General Conformity Rule applies to federal actions occurring in regions designated as being in non-attainment for the NAAQS or attainment areas subject to maintenance plans (maintenance areas). Threshold (*de minimis*) rates of emissions have been established for federal actions with the potential to have significant air quality impacts. If a project/action located in an area designated as non-attainment exceeds these *de minimis* levels, a general conformity analysis is required. New Castle County is designated as a moderate ozone (8-hour) non-attainment area in an ozone transport region, and a nonattainment area for particulate mater (2.5 microns) thus the NO<sub>x</sub>, VOC, PM<sub>2.5</sub>, and SO<sub>2</sub> thresholds apply.

A General Conformity Analysis of this project/action is not required because maximum annual direct and indirect emissions from this project/action have been estimated as:

NO<sub>x</sub>: 11.492 tons per year (TPY); VOC: 1.206 TPY; PM<sub>2.5</sub>: 5.991 tons; SO<sub>2</sub>: 2.366 TPY

These are below the *de minimis* levels established in 40 CFR 93.153 (b) of:

NO<sub>x</sub>: 100 tons; VOC: 50 tons; PM<sub>2.5</sub>: 100 tons; SO<sub>2</sub>: 100 tons

Furthermore, the project/action is not considered regionally significant under 40 CFR 93.153 (i). New Castle County is in attainment for criteria pollutants NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, CO, and Pb and therefore these pollutants are not subject to conformity review.

Supporting documentation and emissions estimates can be found in Section 4.4 and Appendix D of the Environmental Assessment document.

  
JOSEPH H. LEDLOW  
Colonel, U.S. Army Reserve  
99th RSC Engineers

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