

*Environmental Assessment of
Implementation of Base Realignment and Closure
at Fort Allen, Juana Díaz, Puerto Rico*

FINAL



Prepared for

United States Army Reserve

Prepared by

US Army Corps of Engineers, Mobile District

October 2008

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This Environmental Assessment (EA) addresses the proposed action to implement the BRAC Commission's recommendations at Fort Allen, Juana Díaz, Puerto Rico. It has been developed in accordance with the National Environmental Policy Act and implementing regulations issued by the Council on Environmental Quality (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508) and the Army (32 CFR Part 651). Its purpose is to inform decision makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, affected environment, environmental and socioeconomic consequences, mitigation measures, cumulative effects, and conclusions.

CONTENTS

- SECTION 1.0:*** ***PURPOSE OF AND NEED FOR THE PROPOSED ACTION*** summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.
- SECTION 2.0:*** ***DESCRIPTION OF THE PROPOSED ACTION*** describes the proposed action to implement the BRAC Commission's recommendations at Fort Allen.
- SECTION 3.0:*** ***ALTERNATIVES*** examines alternatives for implementing the proposed action.
- SECTION 4.0:*** ***AFFECTED ENVIRONMENT*** describes the existing environmental and socioeconomic setting at Fort Allen.
- SECTION 5.0:*** ***ENVIRONMENTAL CONSEQUENCES*** summarizes the environmental and socioeconomic effects of implementing the alternatives.
- SECTION 6.0:*** ***COMPARISON OF ALTERNATIVES AND CONCLUSIONS*** summarizes the potential socioeconomic and environmental effects of implementing the alternatives.
- SECTION 7.0:*** ***REFERENCES*** provides bibliographical information for cited sources.
- SECTION 8.0:*** ***LIST OF PREPARERS*** identifies the persons who prepared the document.
- SECTION 9.0:*** ***PERSONS CONSULTED*** provides a list of persons and agencies consulted during preparation of this EA.
- SECTION 10.0:*** ***DISTRIBUTION LIST*** indicates recipients of this EA.

- APPENDICES***
- A*** Defense Base Closure and Realignment Commission Recommendations
 - B*** Agency Correspondence

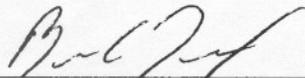
An ***ACRONYMS AND ABBREVIATIONS*** list is provided after the Table of Contents.

ENVIRONMENTAL ASSESSMENT

**IMPLEMENTATION OF BASE REALIGNMENT AND CLOSURE AT
FORT ALLEN, JUANA DÍAZ, PUERTO RICO**

Prepared by:

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

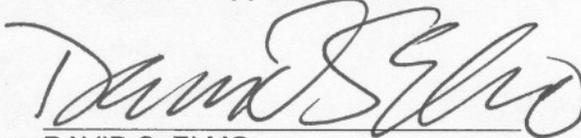


BYRON G. JORNS
Colonel, Corps of Engineers
Commanding

Approved by:

1st Mission Support Command

Fort Buchanan



DAVID S. ELMO
Brigadier General, U.S. Army Reserve
1st Mission Support Command
Commanding

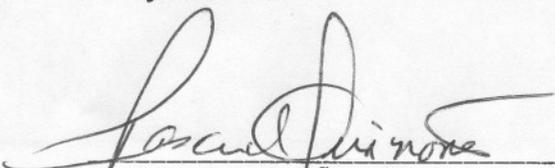


EDWIN C. DOMINGO
Colonel, U.S. Army
Garrison Commander

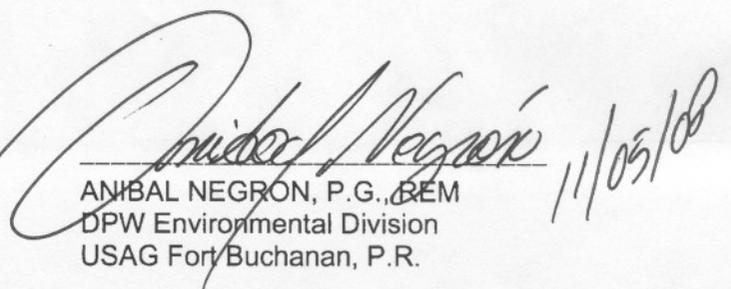
Concurred by:

**1st Mission Support Command
Army Reserve**

Fort Buchanan



PASQUAL A. QUINONES, P.E.
Director of Public Works
USAG Fort Buchanan, P.R. 11/7/08



ANIBAL NEGRON, P.G., BEM
DPW Environmental Division
USAG Fort Buchanan, P.R. 11/05/08

ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: United States Army Reserve

TITLE OF PROPOSED ACTION: Implementation of Base Realignment and Closure at Fort Allen, Juana Díaz, Puerto Rico

AFFECTED JURISDICTION: Juana Díaz, Puerto Rico

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

APPROVED BY: David S. Elmo, Brigadier General, U.S. Army Reserve, 1st Mission Support Command; Edwin C. Domingo, Colonel, U.S. Army, Garrison Commander, Fort Buchanan

ABSTRACT: This Environmental Assessment (EA) considers the proposed implementation of the Base Realignment and Closure (BRAC) Commission's recommendations at Fort Allen, Juana Díaz, Puerto Rico. The EA identifies, evaluates, and documents the environmental and socioeconomic effects of facility construction, renovation, maintenance, and operation proposed to accommodate the changes mandated by the BRAC Commission. A No Action alternative is also evaluated. Implementation of the proposed action is not expected to result in significant environmental impacts. Preparation of an environmental impact statement, therefore, is not required and publication of a Finding of No Significant Impact (FNSI) in accordance with the National Environmental Policy Act is appropriate.

REVIEW COMMENT DEADLINE: The EA and FNSI are available for review and comment for 30 days. A Notice of Availability (NOA) of the documents was published in *El Nuevo Día*. The document review period ends 30 days after publication of the NOA. Copies of the EA and FNSI can be obtained by contacting Mr. Anibal Negron, Acting Chief, Environmental Division, Directorate of Public Works, 218 Brooke St., Fort Buchanan, P.R. 00934, at 787-707-3576, or by sending e-mail requests to anibal.negron1@us.army.mil. Copies of the EA and FNSI are available for review at the Fort Buchanan Environmental Division office and at the Carnegie Public Library, 7 Ponce de Leon Avenue, San Juan, PR 00901. Comments on the EA and FNSI should be submitted to Mr. Negron by no later than the end of the review and comment period.

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Environmental Assessment (EA) describes and analyzes the effects of implementing Base Realignment and Closure (BRAC) at Fort Allen, Juana Díaz, Puerto Rico, as well as associated actions, on the physical and human environments. With respect to Fort Allen, the BRAC Commission recommended in relevant part:

Realign United States Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, Puerto Rico, by relocating the 8th Brigade, 108th Division (Institutional Training) to a new Armed Forces Reserve Center on Fort Allen, Puerto Rico.

One unit, 8th Brigade 108th Division from the Puerto Nuevo U.S. Army Reserve (USAR) Center will be relocated to the new Armed Forces Reserve Center (AFRC), along with its personnel and equipment. The relocation would require constructing and operating new facilities at Fort Allen. The EA identifies and describes the environmental effects associated with the proposed action at Fort Allen.

ES.2 PROPOSED ACTION AND ALTERNATIVES

ES.2.1 Proposed Action (Preferred Alternative)

Construction. The Army proposes to construct and operate a 150-member AFRC and an unheated storage building for use by Army Reserve and Army National Guard units at Fort Allen, Puerto Rico. The AFRC would provide about 55,000 square feet of interior space, and the unheated storage building would provide up to 2,706 square feet of space. The buildings would be of permanent construction with ventilation, air conditioning, plumbing, mechanical, security, and electrical systems. Walkways, curbs and gutters, and storm drainage would be included in the project. The project would also provide adequate parking for all military and privately owned vehicles. Military vehicles that would use the parking facilities at the AFRC include a small number of buses or trucks used to transport Soldiers and supplies. No military vehicles would be assigned to the AFRC, and the AFRC at Fort Allen would not have a military equipment parking (MEP) site. Work performed to support the facilities would include land clearing, paving, fencing, general site improvements, and extension of utilities to serve the project. The Army would incorporate force protection (physical security) measures into the design of the facility. Construction of the AFRC is estimated to begin in May 2009 and to be completed by August 2010. Construction would be completed by no later than September 2011.¹

Location. The AFRC would be on the south-central portion of Fort Allen on a 10-acre site at the south central portion of the base, previously known as the parade field. The site, lying immediately north of Blair Avenue/Street #1 where Route 158 enters the installation, is bounded by Blair Avenue/Street #1, 5th Street, 7th Street, and Avenue A.

Operations. The proposed AFRC at Fort Allen would support operations of the USAR 8th Brigade (Multifunctional), 108th Division (Institutional Training) unit. The brigade consists of approximately 150 personnel. The PRARNG 201st Regiment Regional Training Institute (RTI)

¹ 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.

would also train at the new AFRC. The PRARNG 201st RTI has a staff of 48 and average student load of 100.

The heaviest use of the AFRC would be on weekends. Initially, the student load would average about 100 students on two weekends per month, with additional 2-week courses for another 100 students four times per year. Daily operations (Monday through Friday) would be primarily administrative, recruiting, and preparation for drill weekends, all conducted by a small full-time staff.

ES.2.2 Prison Site Alternative

Under this alternative, the AFRC would be constructed on a 20-acre former detention center site on the southwestern portion of Fort Allen. The site was historically used as a military and juvenile prison. It contains numerous housing buildings, an infirmary, and administrative buildings, all of which are abandoned and which would have to be demolished. The Prison Site alternative is evaluated in detail in the EA.

ES.2.3 No Action Alternative

The No Action alternative assumes that the Army would continue its mission at Fort Allen as it existed in fall 2005, with no unit relocations and no new facilities constructed. Because the BRAC Commission's recommendations must be implemented, continuation of the fall 2005 Fort Allen mission is not possible without further Congressional action; it serves as a baseline alternative against which other alternatives can be evaluated. The No Action alternative is evaluated in detail in this EA.

ES.3 ENVIRONMENTAL CONSEQUENCES

The consequences of the Preferred alternative, Prison Site alternative, and No Action alternative are summarized below and in Table ES-1.

ES.3.1 Proposed Action (Preferred Alternative)

No effects, adverse or beneficial, would be expected on the following resource areas from implementation of the Preferred alternative: land use, floodplains, coastal zone, population, housing, schools, protection of children, environmental justice, and cultural resources. If cultural or historic resources were discovered during construction, PRARNG's ICRMP Standard Operating Procedure (SOP) Number 7 (Inadvertent Discovery) would be followed. No environmental or health effects resulting from the removal, handling, storage, and disposal of hazardous materials, because all BRAC-related activities would be conducted in accordance with applicable regulatory requirements.

Short-term minor adverse effects would be expected on the following resources: the aesthetic and visual environment (from construction activity), air quality (from construction emissions), the noise environment near the construction area, soils, surface water and groundwater quality (from a small increase in erosion and potentially minor spills of dissolved solids and petroleum hydrocarbons from construction equipment), vegetation, the quality of life for personnel working near the construction area, public and ancillary services (from slightly increased demand), and traffic.

Long-term minor adverse effects would be expected on air quality (from operational emissions), infrastructure systems (from the additional demand created by the increased personnel load at Fort Allen and from the generation of solid waste and construction and demolition debris that would reduce available landfill capacity), and on traffic (from increased trips to Fort Allen on local roads).

Table ES-1
Summary of potential environmental and socioeconomic consequences

Resource Area	Alternatives		
	No Action	Preferred	Prison Site
Land use	No effects	No effects	No effects
Aesthetics and visual resources	No effects	Short-term minor adverse; long-term minor beneficial	Short-term minor adverse; long-term minor beneficial
Air quality	No effects	Short- and long-term minor adverse	Short- and long-term minor adverse
Noise	No effects	Short-term minor adverse	Short-term minor adverse
Geology and soils	No effects	Short-term minor adverse	Short-term minor adverse
Water resources			
• Surface water	No effects	Short-term minor adverse	Short-term minor adverse
• Groundwater	No effects	Short-term minor adverse	Short-term minor adverse
• Floodplains	No effects	No effects	No effects
• Coastal zone	No effects	No effects	No effects
Biological resources			
• Vegetation	No effects	Short-term minor adverse	Short-term minor adverse
• Wildlife	No effects	No effects	No effects
• Aquatic biota	No effects	No effects	No effects
• Threatened and endangered species	No effects	No effects	No effects
• Migratory birds	No effects	No effects	No effects
• Wetlands	No effects	No effects	No effects
Cultural resources	No effects	No effects	No effects
Socioeconomics			
• Economic development	No effects	Short-term minor beneficial	Short-term minor beneficial
• Population	No effects	No effects	No effects
• Housing	No effects	No effects	No effects
• Quality of life	No effects	Short-term minor adverse	Short-term minor adverse
• Protection of children	No effects	No effects	No effects
Environmental Justice	No effects	No effects	No effects
Transportation	No effects	Short- and long-term minor adverse	Short- and long-term minor adverse
Infrastructure	No effects	Long-term minor adverse	Long-term minor adverse
Hazardous and toxic substances	No effects	No effects	No effects
Cumulative Effects	No effects	Short-term minor	Short-term minor

A long-term minor beneficial effect on the aesthetics of Fort Allen would result from construction of a modern building with attractive landscaping.

Short-term minor beneficial effects on economic development would result from expenditures and employment associated with construction of the AFRC.

Operations at the AFRC would have the potential to introduce sources of EMI near the ROTHRR and possibly interfere with the operation of the ROTHRR..

ES.3.2 Prison Site Alternative

The effects expected from implementation of the Prison Site alternative would be the same as those for the Preferred alternative, except for the following differences.

Under the Prison Site alternative, additional solid waste would be generated from demolition of the 12 existing Department of Corrections buildings. Their demolition would generate about 2,815 tons of debris that would be recycled or disposed of in landfills.

Implementation of the Prison Site alternative would have more of a beneficial effect on the aesthetics of Fort Allen in that old, deteriorating buildings, roads, walkways, and other infrastructure would be replaced with a modern AFRC and attractive landscaping.

ES.3.3 No Action Alternative

No effects on any of the resource areas considered in the EA would be expected to result from implementation of the No Action alternative.

ES.4 CUMULATIVE EFFECTS

Two reasonably foreseeable projects were identified that could result in short-term minor cumulative effects on resource areas. The projects are the installation of a natural gas pipeline near the southern boundary of Fort Allen, a project referred to as *Gasoducto del Sur*, and the demolition of eight buildings surrounding the Preferred alternative site. These projects could result in minor adverse cumulative effects on aesthetic and visual resources, air quality, the noise environment, water resources, and traffic and transportation. The projects could also result in minor beneficial cumulative effects on economic development. None of the adverse cumulative effects would be significant. No cumulative effects would be expected on other resources.

ES.5 MITIGATION

The EA did not identify the need for mitigation measures for any of the affected resource areas. Restrictions on activities within the prohibited clear zone and prohibited zone in front of the ROTHRR, as proposed by the Navy, however, are recommended to be considered by USAR and PRARNG to avoid interference with operation of the ROTHRR receiver antenna at Fort Allen.

ES.6 CONCLUSIONS

Based on the analysis performed in the EA, implementation of the Preferred alternative or the Prison Site alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

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An **ACRONYMS and ABBREVIATIONS** listing follows the Table of Contents

Acronyms and Abbreviations

ACM	asbestos-containing material
ADNL	A-weighted day-night average sound level
AFRC	Armed Forces Reserve Center
APE	Area of Potential Effect
AQCR	Air-Quality Control Region
AR	Army regulation
ARPA	Archaeological Resources Protection Act
AST	aboveground storage tank
BMP	best management practice
BRAC	Base Realignment and Closure
C&D	construction and demolition
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
CO	carbon monoxide
dB	decibel
dba	A-weighted decibel
DCSIM	Deputy Chief of Staff for Information Management
DMS	Defense Message System
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMI	electromagnetic interference
EO	Executive Order
EPA	[United States] Environmental Protection Agency
EQB	Puerto Rico Environmental Quality Board
ERNS	Emergency Response Notification System
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
FUDS	Formally Used Defense Site
GCR	General Conformity Rule
GDP	Gross Domestic Product
HAP	hazardous air pollutant
HMMWV	high-mobility multipurpose wheeled vehicle
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
IAP	Installation Action Plan
ICRMP	Integrated Cultural Resources Management Plan
IRP	Installation Restoration Program
ITE	Institute of Transportation Engineering
km	kilometer
kV	kilovolt
L ₁₀	level of sound exceeded 10% of the measurement time
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
MACT	Maximum Achievable Control Technology
MATES	Maneuvers and Training Equipment Sites
MEC	munitions and explosives of concern

mgd	million gallons/day
MMRP	Military Munitions Response Program
MOS	Military Occupational Specialty
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO _x	oxides of nitrogen
NRHP	National Register of Historic Places
O ₃	ozone
OMS	Organizational Maintenance Shop
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
ppm	parts per million
PRARNG	Puerto Rico Army National Guard
PRPB	Puerto Rico Planning Board
PRTC	Puerto Rico Telephone Company
PX	Post exchange
RCAS	Reserve Component Automation System
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
ROTHR	Relocatable Over-the-Horizon Radar
RTI	Regional Training Institute
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SOP	Standard Operating Procedure
SWMU	solid waste management unit
TSCA	Toxic Substances Control Act
UFC	Unified Facilities Criteria
µg/m ³	micrograms per cubic meter
UPS	uninterruptible power supply
USAEC	U.S. Army Environmental Center
USAR	U.S. Army Reserve
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound

SECTION 1.0

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

This Environmental Assessment (EA) was prepared by the U.S. Army Corps of Engineers (USACE), Mobile District, for the United States Army Reserve (USAR) to consider and document the potential environmental effects associated with implementing Base Realignment and Closure at Fort Allen, Juana Díaz, Puerto Rico (**Figure 1-1**). The EA is used by the USAR as part of the decision process in selecting the most feasible and prudent alternative for implementing the 2005 recommendations of the Defense Base Closure and Realignment Commission (BRAC Commission) as they pertain to Fort Allen. The EA was prepared in accordance with the National Environmental Policy Act (NEPA, 42 *United States Code* [U.S.C.] 4321 et seq.), the President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 *Code of Federal Regulations* [CFR] Parts 1500–1508), the National Guard Bureau (NGB) NEPA Handbook (NGB 2006), and 32 CFR Part 651.14 (*Environmental Analysis of Army Actions*, March 2002) guidelines.

On September 8, 2005, the BRAC Commission recommended that certain realignment actions occur in the Commonwealth of Puerto Rico. The President approved these recommendations and forwarded them to Congress on September 15, 2005. 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. This EA pertains to the BRAC Commission's recommendations affecting Fort Allen, Puerto Rico.

With respect to Fort Allen, the BRAC Commission recommended in relevant part:

Realign United States Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, Puerto Rico, by relocating the 8th Brigade, 108th Division (Institutional Training) to a new Armed Forces Reserve Center on Fort Allen, Puerto Rico.

One unit, 8th Brigade 108th Division from the Puerto Nuevo U.S. Army Reserve (USAR) Center will be relocated to the new Armed Forces Reserve Center (AFRC), along with its personnel and equipment. The relocation would require construction and operation of new facilities at Fort Allen. Appendix A contains a more detailed recitation of the BRAC Commission's recommendations.

The Army proposes to build an Armed Forces Reserve Center (AFRC) centrally located on Fort Allen with about 55,000 square feet (SF) of interior space and an unheated storage building with up to 2,706 SF of space to comply with the law. The USAR evaluated available land and facilities at Fort Allen and recommended two possible sites for the new AFRC. Based on an analysis of facility and training requirements and the characteristics of the available sites, an implementation plan and Proposed Action were developed, leading to this EA.

The 1990 Defense Base Closure and Realignment Act 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" (Section 2905[c][2][A], Public Law 101-510, as amended). The law further specifies that in applying NEPA provisions to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to



- LEGEND**
- Highway
 - Urban Area
 - Surface Water
 - River Stream

Installation Location Map

Figure 1-1

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” (Section 2905[c][2][B]). Because the BRAC Commission’s deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA, this EA does not address the need for realignment. NEPA does apply to the activities proposed to support unit realignment, and the Army addresses those actions in this document.

1.2 Purpose and Need

The purpose of the proposed action is to provide the necessary facilities to support the BRAC Commission’s recommendation pertaining to Fort Allen.

The need for the proposed action is to improve the nation’s ability to respond rapidly to the challenges of the 21st century. The Army is legally bound to defend the United States and its territories, to support national policies and objectives, and to 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.

In previous BRAC rounds, 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 (DoD) sought to reorganize its installation infrastructure to most 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 recommendations at Fort Allen to achieve the BRAC objectives.

1.3 Scope

The scope of this EA includes descriptions of three possible alternatives, summarized as follows:

Alternative 1: Preferred Alternative (Proposed Action)— Construct, maintain, and operate an AFRC—including conducting Army Reserve and National Guard training classes throughout the year—on a centrally located Parade Field site at Fort Allen, Puerto Rico.

Alternative 2: Prison Site Alternative — Construct, maintain, and operate an AFRC on the site of a former detention facility on Fort Allen near its western boundary.

Alternative 3: No Action Alternative — Continue operations at Fort Allen as they existed in November 2005, when the BRAC Commission recommendations became law, and do not implement either of the other alternatives.

A detailed description of the Proposed Action is provided in Section 2.0. Descriptions of the Prison Site alternative and No Action alternative are provided in Section 3.0.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. Resource areas analyzed in the EA are land use, aesthetics and visual resources, air quality, the noise environment, geology and soils, water resources, biological resources, cultural resources, socioeconomics, traffic and transportation, utilities and infrastructure, hazardous and toxic materials, and cumulative effects.

Conditions existing as of November 2005, considered the baseline conditions, are described in Section 4.0, Affected Environment. The expected effects of the proposed action, the potential for

cumulative effects, and appropriate mitigation measures are presented in Section 5.0, Environmental Consequences.

1.4 Public Involvement and Interagency Consultation and Coordination

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.

Public participation opportunities with respect to this EA and decision making on the proposed action are guided by 32 CFR Part 651. On its completion, the EA, along with a Finding of No Significant Impact (FNSI), will be made available to the public and appropriate agencies for 30 days.

Throughout this process, the public may obtain information on the status and progress of the proposed action and the EA by calling Mr. Anibal Negrón at 787-707-3576.

1.5 Framework for Decision Making

A decision on whether to proceed with the proposed action 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 by Executive Orders (EO) that establish standards and provide guidance on environmental and natural resources management and planning. These include the following: Clean Air Act; Clean Water Act; Noise Control Act; Endangered Species Act; Energy Independence and Security Act of 2007, National Historic Preservation Act; Archaeological Resources Protection Act; Resource Conservation and Recovery Act; and Toxic Substances Control Act. EOs bearing on the proposed action include the following: 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 13101 (*Greening the Government through Waste Prevention, Recycling, and Federal Acquisition*); EO 13123 (*Greening the Government through Efficient Energy Management*); EO 13148 (*Greening the Government through Leadership in Environmental Management*); EO 13175 (*Consultation and Coordination with Indian Tribal Governments*); and EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*). These authorities are addressed in various sections throughout this EA when relevant to particular 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>.

Upon issuance of the Final EA and FNSI, and at the end of the 30-day public review period, the Army will consider any comments submitted by individuals, agencies, or organizations on the proposed action, the EA, or the FNSI. As appropriate, the Army may then 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 would publish a notice of intent to prepare an Environmental Impact Statement (EIS) in the *Federal Register*, commit to mitigation actions sufficient to reduce impacts below significant levels, or take no action.

SECTION 2.0

DESCRIPTION OF THE PROPOSED ACTION

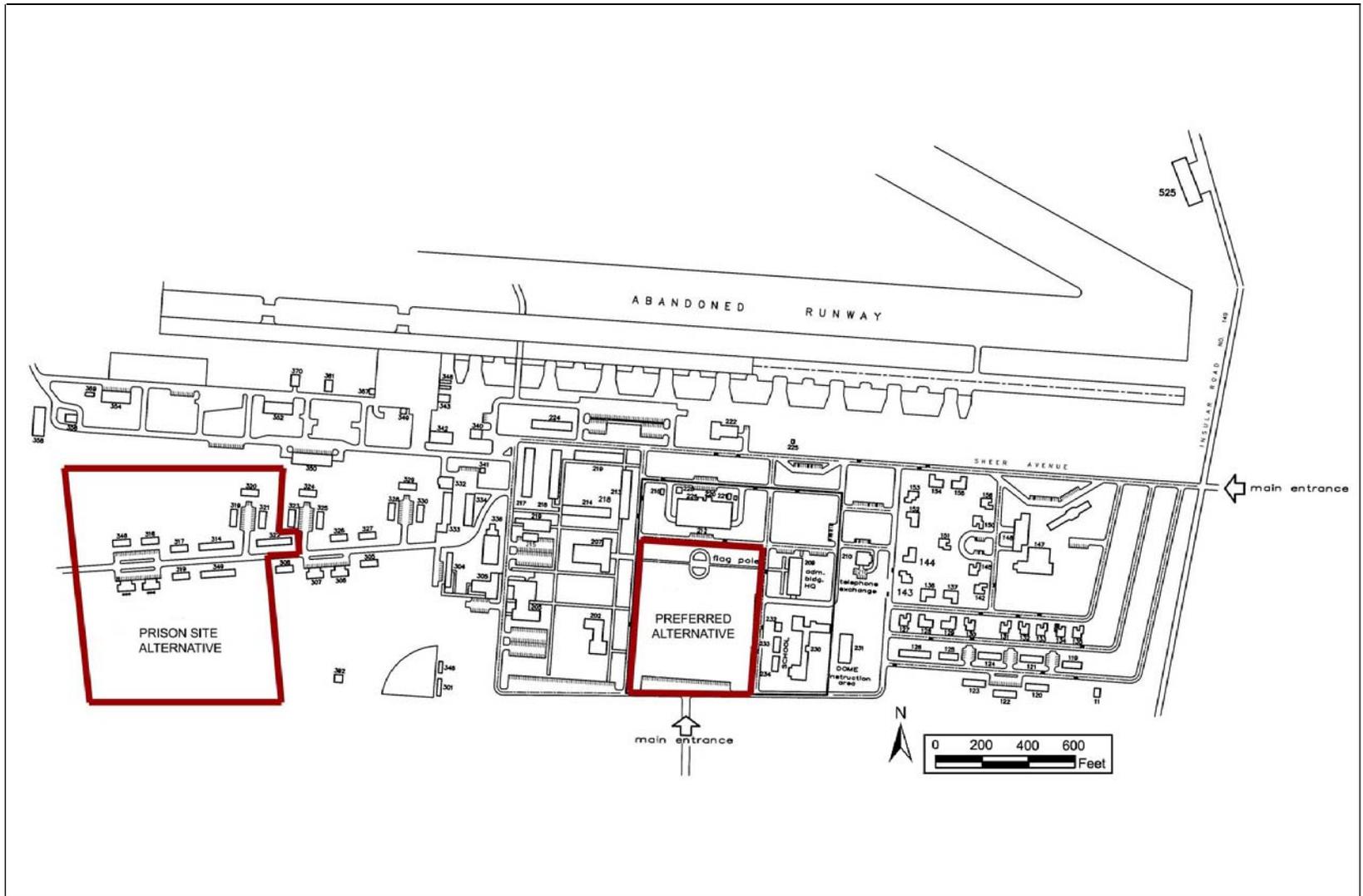
This section describes the Army's Preferred Alternative for carrying out the BRAC Commission's recommendation to "Realign United States Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, PR, by relocating the 8th Brigade, 108th DIV (IT) to a new Armed Forces Reserve Center on Fort Allen, PR."

Construction. The Army proposes to construct and operate a 150-member Armed Forces Reserve Center (AFRC) and an unheated storage building for use by Army Reserve and Army National Guard units at Fort Allen, Puerto Rico. The AFRC would provide about 55,000 square feet of interior space, and the unheated storage building would provide up to 2,706 square feet of space. The buildings would be of permanent construction with ventilation, air conditioning, plumbing, mechanical, security, and electrical systems. Walkways, curbs and gutters, and storm drainage would be included in the project. The project would also provide adequate parking for all military and privately owned vehicles. Military vehicles that would use the parking facilities at the AFRC include a small number of buses or trucks used to transport Soldiers and supplies. No military vehicles would be assigned to the AFRC, and the AFRC at Fort Allen would not have a military equipment parking (MEP) site. Work performed to support the facilities would include land clearing, paving, fencing, general site improvements, and extension of utilities to serve the project. The Army would incorporate force protection (physical security) measures into the design of the facility. Construction of the AFRC is estimated to begin in May 2009 and to be completed by August 2010.

Preferred Siting. The AFRC would be on the south-central portion of Fort Allen on a 10-acre site. The site, lying immediately north of Blair Avenue/Street #1 where Route 158 enters the installation, is bounded by Blair Avenue/Street #1, 5th Street, 7th Street, and Avenue A. **Figure 2-1** shows the location of the proposed site. The proposed site is centrally located, which would make it easy for visiting Soldiers to find, and it is proximate to PRARNG facilities (including the Language Center) on the installation.

Operations. The proposed AFRC at Fort Allen would support operations of the United States Army Reserve (USAR) 8th Brigade (Multifunctional), 108th Division (Institutional Training) unit. The brigade consists of approximately 150 personnel. The PRARNG 201st Regiment Regional Training Institute (RTI) would also train at the new AFRC. The PRARNG 201st RTI has a staff of 48 and average student load of 100.

The heaviest use of the AFRC would be on weekends. Initially, the student load would average about 100 students on two weekends per month, with additional 2-week courses for another 100 students four times per year. Most students would be from Puerto Rico, but Soldiers from any branch of the military could attend classes at the new AFRC. The long-term student load would vary depending on military needs, deployments, and enlistments. Training activities conducted during drill weekends would include Military Occupational Specialty training in Soldiers' skills (such as maintenance and communications), required briefings, physical training, mentoring, and evaluations. Daily operations (Monday through Friday) would include administrative, training, and maintenance support of unit missions and requirements; recruiting; and preparation for drill weekends, all conducted by a small full-time staff.



LEGEND

 Potential BRAC Footprint

Source: Fort Allen, 2006.

Proposed Site Map

Figure 2-1

SECTION 3.0 ALTERNATIVES

3.1 Introduction

A bedrock principle of NEPA is that an agency should consider 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 ready for decision making (any necessary preceding events having taken place), must be affordable and capable of being implemented, and must meet the purpose of and need for the action. The following discussion identifies alternatives that the Army considered and whether they are feasible and, therefore, subject to detailed evaluation in this EA.

The Army assessed alternatives to the proposed action on the basis of three criteria: whether the alternative could physically accommodate realigned units, whether the alternative site was suitable for construction, and whether the alternative could accommodate the schedule. In this section, the Army presents its development of alternatives, addresses alternatives to the proposed action, and describes the No Action alternative.

3.2 No Action Alternative

Inclusion of the No Action alternative is prescribed by CEQ regulations. The No Action alternative serves as the benchmark against which federal actions can be evaluated. No action assumes that the Army would continue its mission at Fort Allen as it existed in fall 2005, with no unit relocations and no new facilities constructed. The brigade proposed for relocation under the proposed action would continue to operate from its current facilities. Because the BRAC Commission's recommendations must be implemented, continuing the fall 2005 Fort Allen mission is not possible without further Congressional action; it serves only as a baseline alternative against which other alternatives can be evaluated. The No Action alternative is evaluated in detail in this EA.

3.3 Preferred Alternative

The Army proposes to construct and operate a 150-member AFRC and an unheated storage unit at Fort Allen, Juana Díaz, Puerto Rico. The Preferred Alternative is further described in Section 2.0.

3.4 Additional Alternatives

Alternative Locations. The BRAC Commission's recommendation specified that the AFRC be constructed on Fort Allen. Accordingly, no locations other than Fort Allen may be considered for the AFRC.

Prison Site Alternative. Review of sites on Fort Allen for construction and operation of the AFRC produced one candidate parcel as an alternative to the preferred site identified in Section 2.0. Under this alternative, the AFRC would be constructed on the site of a former detention center on the southwestern portion of Fort Allen (**Figure 2-1**). The site contains numerous buildings, all of which are abandoned and that would have to be demolished, and is not near other training facilities, and is in a less obvious location than the Preferred Alternative site. The Prison Site was identified for use in the event that use of the preferred site was found to have significant environmental impacts, and the alternative is evaluated in detail in this EA.

SECTION 4.0

AFFECTED ENVIRONMENT

4.1 LOCATION DESCRIPTION

Fort Allen is a PRARNG installation on the island of Puerto Rico, approximately 10 miles east of Ponce and 1 mile north of the Caribbean Sea. Its landscape is generally flat, sloping slightly to the southeast, with scattered trees and, in the administrative area, maintained grassy areas. The climate is dry tropical. The nearest community, Juana Díaz, is approximately 4 miles north of the installation. Fort Allen occupies 941 acres and is approximately 1 mile wide by 1.5 miles long.

The installation has no residents and primarily serves as a classroom training site for PRARNG units and other military branches. Most training classes are held on weekends, and a small administrative and support staff is present on weekdays. It is also a receiver site for a Relocatable Over-the-Horizon Radar (ROTHR) run by 20 civilian defense contractors. The ROTHR is part of a surveillance network designed to monitor flights over an area encompassing more than 1 million square miles in South America.

The installation is bounded on the east by Route 149, and the Jacaguas River runs along part of the northern boundary. Route 149 continues past the installation for about 0.5 mile, where it intersects Route 1. Beyond that is the residential community of Serrano, and south of Serrano is the Caribbean Sea. The area surrounding Fort Allen is primarily agricultural with some interspersed residential areas and small commercial establishments. Nearby residential areas are outside the installation at its northeast corner and south of the eastern half of the installation. Immediately north and east of the installation are undeveloped, vegetated areas, beyond which are expansive agricultural fields. Small commercial establishments lie along Route 149.

Sections 4.2 through 4.14 describe the affected environment for each resource area. Where the affected environment is specific to an alternative, each site is described separately.

4.2 LAND USE

4.2.1 Preferred Alternative

The site for the AFRC is located on the south-central portion of Fort Allen on a 10-acre site. The site, lying immediately north of Blair Avenue/Street #1 where Route 158 enters the installation, is bounded by Blair Avenue/Street #1, 5th Street, 7th Street, and Avenue A (Figure 2-1). The proposed site is centrally located and near the PRARNG facilities on the installation.

The site location has historically been maintained as a grassy field and used as a training site and parade ground. The parcel of land selected for the Preferred alternative consists of a large, central, maintained grassy field that has a single structure: a bricked area with two flagpoles. Adjacent areas have numerous small buildings: Buildings 202 and 207 to the west; Building 212 to the north; and Buildings 209, 230, 232, 233, and 234 to the east. (Buildings 230 and 232 to 234 are the Language Center.) These surrounding buildings house administrative, training, and community functions. The main east-west road through the installation is to the north beyond Building 212. The closest off-installation development is a residential area about one-half mile south of the installation.

4.2.2 Prison Site Alternative

The Prison Site alternative area is a 20-acre site on the southwestern portion of Fort Allen, where there is a former detention center. The parcel was once used as a military and juvenile prison. It has numerous housing buildings, an infirmary, and administrative buildings, none of which are in use. There are 14 abandoned buildings within the former prison area. One asphalt-paved road runs east-west through the area. The remainder of the site is maintained open, grassy area. The site is bounded immediately to the east by military barracks; undeveloped land lies to the north, south, and west.

4.3 AESTHETICS AND VISUAL RESOURCES

4.3.1 Preferred Alternative

The proposed parcel for the Preferred alternative is in the center of the installation just inside the closed Main Entrance off Route 158. Near the northern end of the parcel is a paved, oval walkway with two flagpoles in the center, and north of the flagpoles on the parcel are Building 212 and other small buildings. The central part of the parcel is maintained lawn. Language school buildings and administrative facilities are east of the parcel. A chapel and support facilities are near the parcel to the east and west. All the buildings in the area are one- and two-story cement buildings. The area has scattered trees, and all the buildings are surrounded by maintained lawns. On weekdays, as on most of Fort Allen, there is limited activity on the post; activity on the post increases on weekends, when training sessions are held. Off the installation to the southwest of the parcel is dense, low (not higher than 10 feet) vegetation, beyond which are agricultural fields.



4.3.2 Prison Site Alternative

The proposed parcel for the Prison Site alternative is at the western end of Fort Allen, removed from other areas of activity. The parcel has Buildings 309 to 322, all of which are empty. They were constructed in 1961, are of cinder block construction, and have one or two stories. The area was once used as a juvenile detention center owned and operated by the Puerto Rico Department of Corrections. A road runs between the buildings, and parking lots off the road have been converted to basketball courts. The pavement throughout is in poor condition with weeds growing in the cracks. Uncut grass and sparse trees cover the areas around the buildings and the open areas north and south of the buildings. Utility poles and security lighting mounted on tall poles are present throughout the area, and barbed-wire fence surrounds the parcel. A cluster of similar buildings is east of the parcel on the road leading to the parcel, and scattered



maintenance and storage facilities lie north of the parcel. The vegetation and agricultural fields southwest of the Preferred alternative parcel continue along the southern boundary of the installation to the area south and west of the Prison Site alternative parcel.

4.4 AIR QUALITY

USEPA Region 2 and the Puerto Rico Environmental Quality Board (EQB) regulate air quality in Puerto Rico. The Commonwealth of Puerto Rico is in the Puerto Rico Air Quality Control Region (AQCR 244), which also includes the U.S. Virgin Islands. Puerto Rico is divided into 78 municipalities, the equivalent of counties, and Fort Allen is in the municipality of Juana Díaz. Juana Díaz is an attainment area for all criteria pollutants; therefore, no applicability analysis under the General Conformity Rule is required.

Existing ambient air quality conditions near Fort Allen cannot be estimated from measurements conducted at air quality monitoring stations because there are no monitoring stations near the installation. The nearest air quality monitoring stations are in San Juan and Salinas, Puerto Rico, and monitored air quality conditions at those stations are better than the primary and secondary National Ambient Air Quality Standards (NAAQS) for all monitored pollutants (USEPA 2006).

4.5 NOISE

No significant sources of noise are attributable to Fort Allen, and the existing noise can be characterized as occurring at very low levels. Vehicles are the primary source of noise at the installation. Route 149 passes to the east of the installation, but it is not a major route and carries only a small amount of traffic. The road contributes little to the overall noise environment. The areas surrounding Fort Allen are primarily agricultural/undeveloped, residential, and open space. Noise generated in those areas occurs at levels compatible with operations at the installation.

4.6 GEOLOGY AND SOILS

4.6.1 Geology

Fort Allen is in the South Coast Hydrogeologic Province of Puerto Rico in the southern karst belt. The area is characterized by low-lying river valleys that slope southward toward the Caribbean Sea and hilly uplands. Surface elevations of the area range from approximately 650 feet above mean sea level (MSL) in the mountains to sea level south of the installation (USGS 1977). The installation is situated on the broad, flat-lying coastal plain that extends almost entirely along the perimeter of the island. It is less than a mile from the Caribbean Sea and 4 miles from the mountain foothills. The topography of Fort Allen is relatively flat with slight sloping southeasterly. Elevations range from 5 to 25 feet above MSL. The proposed project site is nearly flat.

4.6.2 Soils

A soil survey for the Ponce area of southern Puerto Rico indicates that five soil series are mapped on Fort Allen: Fraternidad clay (2 to 5 percent slopes), Constancia silty clay, Fe clay, Yauco silty clay loam, and San Anton clay loam (USDA 1979). The soil series on the parcel are Fraternidad clay (2 to 5 percent slopes) and Fe clay.

The Fraternidad clay (2 to 5 percent slopes) occurs on over 80 percent of Fort Allen. The Fraternidad series consists of moderately well drained, gently sloping soils that formed in fine-textured sediments derived from volcanic rocks and limestone. Runoff and permeability are slow and available water capacity is high in Fraternidad clay; erosion potential in the soil series is low. The proposed site is located in an area mapped as Fraternidad clay, 2 to 5 percent slopes (USDA 1979).

The Fe clay occurs in the southeastern corner of the installation and consists of nearly level, somewhat poorly drained, calcareous and saline soils that occur on alluvial fans slightly above floodplains. Runoff in the Fe clay is slow and the water capacity is high. The potential for soil erosion in the Fe clay is low (USDA 1979).

4.7 WATER RESOURCES

4.7.1 Surface Water

Most surface water runoff flows across Fort Allen in a southeasterly direction, ultimately exiting the installation through an open drainage ditch on the southeastern boundary. After leaving Fort Allen, surface water runoff flows in the ditch along Route 149 for about a mile before it discharges into the Caribbean Sea (USACE, Mobile District 1998).

The surface waters near Fort Allen consist of two rivers. The Rio Jacaguas forms the northern boundary of Fort Allen and then flows southward about 1 kilometer from the western boundary of the installation. The Rio Inabon flows southward about 3 kilometers west of the installation. Both rivers flow from mountains to the north to the Caribbean Sea. The Rio Jacaguas is the second-largest river on the southern slope that rises on the Cordillera Central. The Rio Inabon is more prone to flooding than the Rio Jacaguas, which is controlled by the Guayabel Dam. Neither river is near the proposed project site.

Existing potential sources of waterborne contaminants include storm water runoff from impervious areas, land disturbances, solid waste management units (SWMUs), fuel oil storage tanks, and routine activities (e.g., vehicle use and maintenance) that could be a source of contamination. None of these potential sources are known to have contributed to any water contamination problems in the areas proposed for the AFRC.

4.7.2 Hydrogeology/Groundwater

There are four major aquifers in the Fort Allen region. The primary aquifer is the surficial alluvial aquifer. The water table varies and is within 10 to 20 feet of the ground surface (USACE, Mobile District 1998). The potential sources of groundwater quality effects in the cantonment area are the same as those listed earlier for surface water—SWMUs, an aboveground storage tank (AST), and storm water runoff from impervious areas.

4.7.3 Floodplains

The proposed locations for the AFRC are not within the 100-year floodplain.

4.7.4 Coastal Zone Management

The U.S. Department of Commerce approved the Coastal Zone Management Program for Puerto Rico in 1978. The program was prepared by the Commonwealth of Puerto Rico under the auspices of the Coastal Zone Management Act of 1972 (USACE, Mobile District 1998).

The program outlines the entire coastal zone, areas of special importance, delicate ecosystems, potential threats from the pressures or effects of development, and proposed programs to manage this crucial part of the environment. Land owned by the federal government is exempted from the act; however, Section 307 of the Coastal Zone Management Act requires that any federal activity that directly or indirectly affects land or water use or natural resources of the coastal zone must be consistent with the Coastal Zone Management Program to the maximum extent practicable. The coastal zone generally is 1,000 meters inland and 3 marine leagues (equivalent to 9 nautical miles, or 10.36 statute miles) seaward, but it extends farther for important coastal resources. The locations of projects on Fort Allen are outside this distance requirement; however, coastal zone

certification might be needed, depending on the presence of sensitive areas and important coastal resources. The Puerto Rico Planning Board (PRPB) will make a consistency determination during its review of the Final EA.

4.8 BIOLOGICAL RESOURCES

4.8.1 Preferred Alternative

The proposed site is partially developed property with numerous small buildings, each surrounded by maintained green space. The green spaces are covered with various grass species and sparsely populated with various tree species. Nearby areas are mostly the same as the proposed site, with the exception of a vegetated area that borders agricultural land southwest of the proposed site.

Sensitive Habitats. Because of development, landscaping, and past and current human activity, no sensitive habitats are present on the proposed site. No locally designated heritage trees or natural communities occur in the area.

Wildlife. Natural wildlife is not well represented at Fort Allen. The landscaped nature of the installation and past disturbance and development have reduced the diversity of vegetation on the installation, and wildlife is therefore limited as well. Species commonly associated with suburban residential areas, such as mice, rats, lizards, and passerine birds, are found at the installation (PRARNG 1996). Typical mammal species include the velvety freetailed bat (*Molossus molossus*), house mouse (*Mus musculus*), roof rat (*Rattus rattus*), and Norway rat (*Rattus norvegicus*). Anole lizards (*Anolis* sp.) are the most common reptiles. Birds likely to be encountered on the installation include the gray kingbird (*Tyranus dominicensis*), bananaquit (*Coereba flaveola*), smooth-billed ani (*Crotophaga ani*), American kestrel (*Falco sparverius*), mourning dove (*Zenaida macroura*), Greater Antillean grackle (*Quiscalus niger*), black-faced grassquit (*Tiaris bicolor*), mockingbird (*Mimus polyglotus*), zenaida dove (*Zenaida aurita*), and shiny cowbird (*Molothrus bonariensis*).

Wetlands. National Wetlands Inventory data indicate the presence of forested/scrub wetlands south of the proposed site off the installation and adjacent to the nearby agricultural fields and residential areas (USFWS 2007).

Sensitive Species. No endangered, threatened, or protected species listed by the federal government or the Commonwealth of Puerto Rico are known to occur on Fort Allen. The U.S. Fish and Wildlife Service indicates that the federally endangered Puerto Rico boa (*Epicrates inornatus*) is found in the Juana Diaz area, but no occurrences of the species are known from Fort Allen. The only sensitive biological area nearby is a nesting area for the least tern (*Sterna altilarum*), a Puerto Rico threatened species, about 1 mile west of the Preferred alternative site.

4.8.2 Prison Site Alternative

The proposed Prison Site also has small buildings surrounded by grassed areas and scattered trees. The site is near the western boundary of Fort Allen, beyond which lie fields vegetated with tall grasses and agricultural fields. Agricultural fields lie off the installation south of the Prison Site, and developed areas on the installation lie east and north of the site.

Sensitive Habitats. Because of development, landscaping, and past and current human activity, no sensitive habitats are present on the Prison Site. No locally designated heritage trees or natural communities are found on or near the Prison Site.

Wildlife. The wildlife potentially present on the Prison Site is the same as that of the Preferred alternative site discussed above.

Wetlands. National Wetlands Inventory data indicate that the wetlands southwest of the Preferred alternative site are also the closest wetlands to the Prison Site (USFWS 2007).

Sensitive Species. No endangered, threatened, or protected species listed by the federal government or the Commonwealth of Puerto Rico are known to occur on the Prison Site. Nearby federal and Puerto Rico threatened and endangered species are the same as those described above for the Preferred alternative site.

4.9 CULTURAL RESOURCES

Cultural resources are defined as historic properties as defined by the National Historic Preservation Act (NHPA), cultural items as defined by Native American Graves Protection and Repatriation Act (NAGPRA), archaeological resources as defined by the Archaeological Resources Protection Act (ARPA), sacred sites as defined in EO 13007 to which access is afforded under the American Indian Religious Freedom Act, and collections and associated records as defined in at 36 CFR Part 79.

4.9.1 Prehistoric and Historic Background

The 1997 *Archaeological Survey of Approximately 125 Acres Within the Vieques Naval Reservation, Vieques Island, Puerto Rico; and 180 Acres at Fort Allen, Juana Díaz, Puerto Rico* (Goodwin et al. 1997) can be consulted for a discussion of the cultural background of the region and project area.

4.9.2 Status of Cultural Resource Inventories and Section 106 Consultations

Cultural resources management procedures for Fort Allen are defined in Army Regulation (AR) 200-1, *Environmental Protection and Enhancement* (Headquarters, Department of the Army). Cultural resources include historic properties (buildings, structures, districts, and the like, as defined by AR 200-1 and the NHPA), archaeological sites (as defined and governed by the ARPA, AR 200-1, and the NHPA), Native American sacred sites (as identified in EO 13007 and the American Indians Religious Freedom Act), Traditional Cultural Properties (as defined in the NHPA and as described in National Register Bulletin 38), and sites and artifacts associated with Native American graves (as defined and governed by the NAGPRA).

Fort Allen does not have an installation-specific Integrated Cultural Resources Management Plan (ICRMP). The PRARNG has a Puerto Rico-wide ICRMP that covers Fort Allen.

The proposed undertaking at Fort Allen would involve one of two alternatives. New construction is proposed for a parcel that includes the flagpole near the Main Entrance at Route 158, or for the Department of Corrections parcel that encompasses Buildings 314, 316–322, 348, and 349. For the purposes of this EA, the cultural resources Areas of Potential Effect (APE) is defined as each of these parcels and an immediate buffer around them.

Research at the Puerto Rico State Historic Preservation Office (SHPO) determined that there are no previously recorded archaeological sites or National Register of Historic Places (NRHP) properties in the APEs. A copy of the consultation letter sent to the SHPO is included in Appendix B.

The only prior archaeological survey at Fort Allen was conducted in 1997 by R. Christopher Goodwin & Associates, Inc. (Goodwin et al. 1997). The 1997 survey for the proposed ROTH system examined 180 acres in the central portion of Fort Allen, approximately 1,000 feet north of the present APE. On the basis of their background research, Goodwin et al. (1997:51) suggested the following:

Background research has suggested that, due to the location of the testing area in the low-rolling foothills of the Cordillera several km inland, and the absence of nearby fresh water sources, the potential for Precolumbian archaeological deposits was low. Archival data also suggested that the potential for pre-modern historic resources was also low.

No archaeological sites were discovered by the Goodwin & Associates survey, and much of their study area had been severely disturbed by modern activities.

No historic resource or architectural survey has been conducted at Fort Allen. World War II and Cold War era resources have not been identified or evaluated. The buildings on the Prison Site were constructed in 1961. The small buildings surrounding the preferred site were constructed between 1961 and 1988 (PRARNG 2008).

4.9.3 Native American Resources

No federally recognized tribes with historical links to Puerto Rico have been identified.

4.10 SOCIOECONOMICS

4.10.1 Introduction

This section describes the socioeconomic conditions of the region of influence (ROI)—economic development, demographics, housing, quality of life, and protection of children. The geographic area in which the predominant social and economic effects of the project alternatives would occur defines the ROI for this study. The major factors used to determine the ROI are the residency distribution of the site's employees and training Soldiers, commuting distances and times, and the location of businesses that provide goods and services to the project site and personnel. Based on these criteria, the ROI for the Fort Allen realignment action is the Juana Díaz municipality. For comparative purposes, additional data are presented for Puerto Rico.

The baseline year for socioeconomic data is 2005, the date of the BRAC Commission's announcement of the Fort Allen realignment. Where 2005 data are not available, the most recent data available are presented. Census 2005 Puerto Rico Community Survey data were not available for the Juana Díaz municipality. The most recent data available are the 2000 Census data.

4.10.2 Economic Development

Industry and Employment. Once primarily supported by agriculture, Puerto Rico's economy is now driven by manufactured goods, high technology, pharmaceuticals, and tourism. Puerto Rico's estimated 2005 Gross Domestic Product (GDP) was \$72.37 billion. Manufacturing contributed about \$30.85 billion to the GDP; finance, insurance, and real estate accounted for \$12.5 billion; and trade accounted for \$8.5 billion. Agriculture accounted for about \$220 million, or less than 1 percent of the GDP. In the agricultural sector, sugar production has been surpassed by dairy production and other livestock products. The principal livestock are cattle, pigs, and poultry. Tourism has traditionally been an important source of income; about 5 million tourists visit Puerto Rico annually, and the tourism industry employs more than 60,000 people (CIA 2006; welcome.topuertorico.org 2007).

In 2005 the civilian labor force for the Juana Díaz municipality was 17,385, with 15,242 persons employed. The 2005 annual unemployment rate was 12.3 percent, slightly below the 12.6 percent unemployment rate in 2000 (BLS 2006). Puerto Rico's 2005 annual unemployment rate was 11.3 percent, up from 10.1 percent in 2000.

Fort Allen is home to several training schools: the PRARNG Language Center, which provides state-of-the-art English language training for PRARNG nonnative English speakers; the Language Enhancement and Academic Development to Officer Candidate School, an academic training workshop for eligible Soldiers in the PRARNG; and the PRARNG's Challenge Program, an intervention program that targets at-risk teenagers and teaches academic, behavioral, and work skills (Burgos, personal communication, 2007; PRARNG 2006). During peak times, Fort Allen has a population of 600 to 1,000 staff and students (Burgos, personal communication, 2007).

Income. In 2005 Puerto Rico's per capita income was \$9,693, up 18 percent from the 2000 per capita income of \$8,185. Puerto Rico's median household income was \$17,184, up 19 percent from the 2000 median household income of \$14,412 (U.S. Census Bureau 2000a, 2005). Sixty-four percent of the households received earnings, and 13 percent received retirement income other than Social Security. Forty-one percent of the households received Social Security, and the average income from Social Security was \$8,801. These income sources are not mutually exclusive; some households received income from more than one source (U.S. Census Bureau 2005).

Income in the Juana Díaz municipality was lower than that of Puerto Rico. Juana Díaz's per capita income in 2000 was \$5,632, compared to the Puerto Rico average of \$8,185. The municipality's median household income was \$12,892, with 63 percent of households receiving earned income. For comparison, Puerto Rico's 2000 median household income was \$14,412, with 65 percent of households receiving earnings (U.S. Census Bureau 2000a).

4.10.3 Population

In 2005 Puerto Rico's population was 3,865,280, an increase of 2 percent from the 2000 population of 3,806,610 (U.S. Census Bureau 2000a, 2005). Between 1990 and 2000, Puerto Rico's population increased by 8 percent, from 3.5 to 3.8 million. The Juana Díaz municipality population was 50,531 in 2000, an increase of 12 percent over the 1990 population of 45,198 (U.S. Census Bureau 2000a, 2000b).

4.10.4 Housing

No permanent party personnel reside on Fort Allen. Family housing units have been converted to other uses. Fort Allen has 29 barracks, 9 of which are vacant for repair and renovation (Burgos, personal communication, 2007).

In 2005 Puerto Rico had 1.4 million housing units, of which 87 percent were occupied and 13 percent were vacant. The vacancy rate was up from 11 percent in 2000. The median monthly mortgage was \$752, an increase from \$625 in 2000. Median monthly gross rent was \$380, up from \$297 in 2000. There were 1.3 million households in Puerto Rico, and the average household size was 3.1 people (U.S. Census Bureau 2000a, 2005).

The Juana Díaz municipality had 16,490 housing units as of 2000. Ninety-one percent of the units were occupied and 9 percent were vacant. The median monthly mortgage was \$485 and the median gross rent was \$242. The average household size was 3.3 people (U.S. Census Bureau 2000a).

4.10.5 Quality of Life

Law Enforcement, Fire Protection Services, and Medical Services. The Fort Allen Police Station, in Building 156, is staffed by permanent, full-time State Military Police. In addition, Military Police (MPs) work during annual training and weekend drills. The Fort Allen Fire Station, in Building 340, is staffed for a one-engine company. Fort Allen's Aid Station provides

limited medical care and first aid for Soldiers and students. Fort Allen does not have a hospital. The closest hospital is Damas Hospital in Ponce, about 10 miles west of Fort Allen.

Schools. There are no permanent party personnel or school-age dependents living on Fort Allen. The Puerto Rico Department of Public Education oversees the Commonwealth's public school system, which has about 1,500 schools and more than 575,000 students. Juana Díaz municipality has 22 public schools serving children in kindergarten through 12th grade (NCES 2006).

Family Support, Shops and Services, and Recreation. The PRARNG provides a full range of family support services to Fort Allen's Soldiers through the PRARNG Headquarters office in San Juan. Services include family support groups, the Family Assistance Center and family center programs, and dependent educational and financial assistance programs (PRARNG 2006).

Fort Allen has a mess hall, gym, recreational area with picnic gazebo, swimming pool, chapel, barber shop, Class VI (alcoholic beverages) store, ball field, and golf course (although it has not been in use for several years) (Burgos, personal communication, 2007; PRARNG 2006). Ponce, Puerto Rico's second-largest city, is about 10 miles west of Fort Allen. It has an abundance of shops, restaurants, and specialty stores, as well as historic sites, casinos, and recreational opportunities.

4.10.6 Protection of Children

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), seeks to protect children from disproportionately incurring environmental health risks or safety risks. The EO recognizes a growing body of scientific knowledge that demonstrates that children might suffer disproportionately from environmental health risks and safety risks. These risks arise because children's bodily systems are not fully developed; children eat, drink, and breathe more than adults in proportion to their body weight; their size and weight might diminish protection from standard safety features; and their behavior patterns might make them more susceptible to accidents. On the basis of these factors, President Clinton directed each federal agency to make it a high priority to identify and assess environmental health risks and safety risks that could disproportionately affect children. President Clinton also directed 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.

Children are present at Fort Allen as occasional visitors. The Army has taken precautions for their safety by a number of means, such as using fencing, setting limits on access to certain areas, and providing adult supervision.

4.11 ENVIRONMENTAL JUSTICE

Environmental justice addresses race, ethnicity, and the poverty status of populations within the ROI. On February 11, 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse effects from proposed actions and to identify alternatives that might mitigate such effects.

Minority populations are identified as Black or African American and not of Hispanic origin; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander; Hispanic; persons of some other race; and persons of two or more races. Minority populations should be identified where the minority population of the affected area exceeds 50 percent or the minority population percentage of the affected area is meaningfully greater than the minority

population percentage in the general population or other appropriate unit of geographic analysis (CEQ 1997). As of 2005, 99 percent of the people in Puerto Rico were Hispanic and 1 percent were white non-Hispanic (U.S. Census Bureau 2005). In the Juana Díaz municipality, 99.5 percent of the population was Hispanic (U.S. Census Bureau 2000a).

The poverty thresholds established by the Census Bureau are used to identify low-income populations (CEQ 1997). Poverty status is reported as the number of persons or families with income below a defined threshold 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. As of 2005, 45 percent of the Puerto Rico residents were classified by the U.S. Census Bureau as living in poverty (U.S. Census Bureau 2005). In the Juana Díaz municipality, 57 percent of the population was living below the poverty level (U.S. Census Bureau 2000a).

4.12 TRANSPORTATION

Traffic on Fort Allen is generated solely by personnel and visitors arriving at and leaving the installation. The roadways are asphalt and have two lanes. There are no areas of traffic congestion at the installation. Access to the installation is from Route 149, a two-lane local road that connects the town of Juana Díaz and Highway 52 to the north with PR Route 1 to the south. Traffic on Route 149 is typical of rural areas.

The primary road network on the installation contains approximately 8 miles of roadways, primarily configured in a north-to-south and east-to-west grid. Access to the installation is provided through the Main Gate off Route 149 at the east end of the installation. The primary roads on the installation are Avenue A through Avenue D, running east to west, and 1st Street (Blair Avenue) through 8th Street, running north to south. There are no community facilities or family housing areas on the installation. The existing road network is suitable for the limited nature of the existing training and operations at Fort Allen.

On the north side of the installation is a closed airfield, which is 5,400 feet long and runs east to west. Known as Losey Field, it was used during World War II by fighter and bomber units and has been inactive since then.

The largest major airport in the area is the Luis Muñoz Marín International Airport in San Juan, which is a 1.5-hour drive from the installation. Mercedita International Airport, approximately 3 miles west of Fort Allen, also provides limited air service from selected U.S. cities to the Ponce area.

4.13 INFRASTRUCTURE

The infrastructure systems available at Fort Allen are the potable water, storm water drainage, electricity, solid waste disposal, and telephone and radio communication systems, as well as a ROTH communication system.

4.13.1 Potable Water Supply

The water supply system at Fort Allen consists of a water treatment plant, two groundwater wells, and a 150,000-gallon tank for water storage. The system components are centrally located in the cantonment area. The water treatment plant has a capacity of 0.165 million gallons per day (mgd). Demand for potable water was reported as approximately 0.062 mgd for an estimated population of approximately 1,500 people. The potable water supply in the area surrounding Fort Allen is drawn primarily from groundwater.

4.13.2 Sewer and Wastewater

The Fort Allen wastewater treatment discharge is connected to the publicly owned treatment works of the municipality of Juana Diaz.

4.13.3 Energy Sources

Electricity. Puerto Rico Electric Power Authority provides electrical power for Fort Allen through a 38-kilovolt substation. Internal electrical power capacity is 220–440 triphase (approximately 4,000 volts).

Other Energy Systems. Natural gas and other energy systems are not available at Fort Allen.

4.13.4 Storm Water Collection System

A separate storm water drainage system is in place at Fort Allen. Most surface water runoff flows southeasterly and is intercepted by a collection pipe. This runoff is then discharged into an open drainage ditch along the southeastern perimeter of the installation. After leaving Fort Allen, surface water runoff flows in the ditch along Route 149 for approximately 1 mile before it discharges into the Caribbean Sea (USACE, Mobile District 1998; USAEC 1994).

4.13.5 Solid Waste

The solid waste generated at Fort Allen consists mostly of domestic municipal waste. It is collected and transported by licensed contractors to a landfill site in Ponce, Puerto Rico (USACE, Mobile District 1998).

There are two closed landfills at Fort Allen. One landfill was used by the Immigration and Naturalization Service in 1981 and 1982. The landfill covers approximately 7 acres in the central portion of Fort Allen. The U.S. Navy operated the second landfill from 1974 to 1980. The landfill covers approximately 4 acres in the extreme northwestern portion of Fort Allen, and it contains municipal solid waste and construction and demolition (C&D) debris.

4.13.6 Communication Systems

The DCSIM (Deputy Chief of Staff for Information Management) provides the Fort Allen Telephone infrastructure. The service is managed by the Puerto Rico Telephone Company (PRTC), which also owns the lines. Telephone exchange equipment is housed in Building 210 and in the data communications hub in Building 209. There is no Defense Message System on Fort Allen. Fort Allen has a high-frequency radio serviced by the MATES (Maneuver Area Training Equipment Site). Radio transmitters and receivers are located in the Post Orderly Room. The DCSIM provides Internet and Intranet connectivity for access to the RCAS (Reserve Component Automation System) network (Alvarado, personal communication, 2007.)

4.13.7 Relocatable Over-the-Horizon Radar (ROTHR)

Fort Allen is the site of the passive receiver component of one of the U.S. Navy's three ROTHR systems. The ROTHR system is a high-frequency national counter-narcotics system that provides over-the-horizon detection and tracking of suspected drug-carrying aircraft and surface vessels. Each ROTHR system is composed of a transmitter and receiver separated by 50–100 miles. All three ROTHR systems report data to the Combined Operations Control Center in Chesapeake, Virginia. The ROTHR receiver antenna at Fort Allen runs from east to west near the northern extent of the installation and lies approximately 3,000 feet north of the southern boundary of the installation. The look angle for the ROTHR receiver is to the south, and effective operation depends on the lack of physical obstructions to one degree of the southern horizon and a quiet electromagnetic environment within 3 miles of the site.

The ROTH receiver operates within the high-frequency range (5–28 megahertz). It detects and tracks targets represented by radio signals that are just above the ambient or natural electromagnetic noise level. The noise level is composed of both naturally occurring and man-made sources that combine to cause electromagnetic interference (EMI). Any elevation in that noise level, therefore, inhibits the ROTH's ability to detect and track suspect targets.

4.14 HAZARDOUS AND TOXIC SUBSTANCES

Specific environmental statutes and regulations govern hazardous material and hazardous waste management activities at Fort Allen, Puerto Rico. For the purpose of this analysis, the terms *hazardous waste*, *hazardous materials*, and *toxic substances* include those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act, the Resource Conservation and Recovery Act (RCRA), or the Toxic Substances Control Act (TSCA). In general, they include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, might present substantial danger to public health or welfare or to the environment when released into the environment.

4.14.1 Storage and Handling Areas

Underground storage tanks (USTs) have been removed from Buildings 222, 342 and 358 (Diaz, personal communication, 2008; USAEC 1997). No contamination was identified from the removal of the USTs at Buildings 222 and 342. Four groundwater monitoring wells, however, were installed after the removal of the UST at Building 358. These former UST sites are closed per the Puerto Rico Environmental Quality Board.

According to the site inspection report, installation personnel could not confirm the historical background and number of ASTs (USAEC 1997). An AST on the Prison Site alternative area serves an emergency generator that is regularly started to maintain operational status. According to data obtained, there are no USTs or ASTs on the Preferred alternative site for the AFRC.

4.14.2 Hazardous Waste Disposal

According to the *Fort Allen Army Defense Environmental Restoration Program Installation Action Plan (IAP)*, dated February 6, 2006, Fort Allen is listed as a RCRA Small Quantity Generator of hazardous wastes under ID # PR6211843077. The installation does not have a permit to store waste for periods greater than 270 days. Wastes are generated during vehicle maintenance (USACE, Mobile District, 1998). The IAP also indicated that the installation has no spills or releases recorded in the Emergency Response Notification System (ERNS) database (Fort Allen 2006). On the basis of the information available, there is no indication that hazardous waste has been stored on either of the alternative properties.

4.14.3 Site Contamination and Cleanup

The Fort Allen IAP is used to track Defense Environmental Restoration Sites. There were nine Installation Restoration Program (IRP) sites at Fort Allen, all of which have “response complete” status. EPA Region 2 issued a No Further Remedial Action Planned for all IRP sites at Fort Allen in October 2002 and subsequently delisted the facility in the *Federal Register* in December 2003 (Fort Allen 2006).

Based on available information, none of the former IRP sites were within the proposed BRAC properties.

4.14.4 Special Hazards

Asbestos. Two categories are used to describe asbestos-containing material (ACM). *Friable ACM* is any material containing more than 1 percent asbestos (as determined by polarized light microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. *Non-friable ACM* is material that contains more than 1 percent asbestos and does not meet the criteria for friable ACM.

No asbestos survey data for the eight buildings proposed to be demolished surrounding the preferred site or for the buildings on the Prison site were available; however, depending on the age of existing structures, asbestos could be present in floor tile mastic, duct mastic, pipe mastic, joint compound and tape, roofing material, pipe insulation, transite panels, fireproofing material, fiber board, duct expansion fabric, furnace gaskets, vinyl floor tile, boiler insulation, vent flashings, door insulation, caulking, and other building components. Building 212, on the northern part of the Preferred Site, dates from the 1950s and reportedly contains materials with ACM. ACM is characterized and removed from buildings that are scheduled for demolition or rehabilitation. Asbestos is disposed of in accordance with applicable federal and local solid waste management regulations.

Polychlorinated Biphenyls. Polychlorinated biphenyls (PCBs) are industrial compounds used in electrical equipment, primarily capacitors and transformers, because they are electrically nonconductive and remain stable at high temperatures. Because of their chemical stability, PCBs persist in the environment, bioaccumulate in organisms, and become concentrated in the food chain. TSCA regulates the removal and disposal of contaminated equipment containing PCBs at concentrations greater than 50 parts per million.

A suspected leaking transformer that served the installation's potable water system was included in a Phase I Site Investigation completed in 1996. The transformer was located approximately 30 feet north of Building 338 (Water Treatment Plant) and has been replaced (Diaz, personal communication, 2008; USAEC 1997). All PCB-containing transformers at Fort Allen have been identified and replaced with non-PCB containing fluids as required by law.

Lead-based Paint. Current Army policy calls for controlling lead-based paint (LBP) by using in-place management. In-place management is used to prevent deterioration over time of those surfaces likely to contain LBP, followed by replacement as necessary. Maintenance staff are given instructions on routine cleaning procedures leading to capture of LBP fragments from suspected locations. LBP materials on existing facilities are to be encapsulated or removed in accordance with Army and Occupational Safety and Health Administration (OSHA) guidelines. LBP debris from renovation and demolition activities is managed and disposed of as construction debris in accordance with applicable regulations.

Pesticides. The former pesticide/herbicide mixing and storage area is located northeast of Building 354. During a preliminary assessment conducted in 1993, the mixing area was found to contain approximately fifteen 55-gallon drums of various products. Several of the drums were rusting, and some were stored on their sides. In addition, no secondary containment was evident in the mixing/storage area. The drums were stored under a former structure known as Building 360. No evidence of spills was observed during the assessment (USAEC 1997). During the site inspection in 1996, there was no evidence of the former mixing area and the paved area was being used to store large piles of brush. The Phase I Site Inspection of the mixing area was completed in December 1996.

Pest management on Fort Allen is conducted by personnel who are DoD-certified and in accordance with a Pest Management Plan.

Ordinance. AR 385-63 and U.S. Army Training and Doctrine Command Regulation 385-2 require weapons ranges within Army installations to comply with established safety standards. A Phase 3 Army Range Inventory was completed at Fort Allen in December 2003. The inventory identified two eligible sites for the Military Munitions Response Program (MMRP)—the Multi-Purpose Range and the West Fort Allen Small Arms Range. These sites are not eligible for the Army MMRP and should be addressed under the Formally Used Defense Site (FUDS) program (Diaz, personal communication, 2008).

The Multi-Purpose Range was constructed in 1941 at the base of Figueroa Hill. It included a pistol/rifle range and a grenade court. It also was used to store bombs weighing 200 to 500 pounds and more. In 1963 the range was transferred out of DoD control, and in 1995 a housing development was constructed on the 3-acre site. The West Fort Allen range was also constructed in 1941 and used for small arms training up until 1987. The site is undeveloped (USAEC 2006).

Both sites are north of the cantonment area.

Mold. Mold spores continuously migrate through indoor and outdoor air, and they can grow and reproduce in wet media on wood, paper, carpet, and foods. When excessive moisture or water accumulates indoors, mold growth often occurs, particularly if the moisture problem remains undiscovered or unaddressed. Moisture problems in buildings can be caused by a variety of conditions, including roof and plumbing leaks, condensation, and excess humidity. Some of the potential effects and symptoms associated with mold exposures are allergic reactions, asthma, and other respiratory complaints. Mold problems are controlled on the installation as needed by eliminating the sources of mold, followed (where required) by repairing and cleaning mold-affected substrates.

SECTION 5.0 ENVIRONMENTAL CONSEQUENCES

5.1 PREFERRED ALTERNATIVE

5.1.1 Land Use

No adverse effects on land use would be expected. The Preferred alternative would not change the land use from military installation use, though the parcel would be changed from undeveloped open space to developed land. The proposed use of the parcel would be compatible with surrounding land uses.

5.1.2 Aesthetics and Visual Resources

Short- and long-term minor adverse and long-term minor beneficial effects on the aesthetics of Fort Allen would be expected. Construction activity on the selected site for the AFRC would create a short-term adverse visual and aesthetic effect. Implementation of the Preferred alternative would change the overall appearance of the flag pole area and permanently alter the aesthetics of the area as conceived of by PRARNG master planners. The area has a modest grandeur with its large, open lawn and its oval walkway surrounding the two prominent flagpoles, and these features present an aesthetically pleasing view of the installation from the nearby entrance. The new AFRC would occupy half or more of the open space now occupied solely by the flagpoles, and preliminary plans indicate that the flagpoles would be moved nearer to Blair Avenue/1st Street. The new AFRC would be expected to be designed to blend well with existing buildings and to provide a favorable impression from the south.

5.1.3 Air Quality

Short- and long-term minor adverse effects on air quality would be expected. Short-term construction emissions and long-term minor increases in operational and vehicular emissions would generate less than the General Conformity Rule de minimis quantities and would not contribute to a violation of any federal, state, or local air regulation. Because the proposed action is in an area that is in attainment for all criteria pollutants, the General Conformity Rule does not apply and an applicability analysis is not required. The proposed action is exempt from the General Conformity Rule (40 CFR 95.153), and a Record of Non-Applicability is not required.

The AFRC and associated facilities would be equipped with all necessary mechanical systems. These stationary sources of air emissions may be subject to federal and state air permitting regulations. Potential emissions from air conditioning systems would be exempt from New Source Review permitting requirements, would not be subject to Prevention of Significant Deterioration review, would not exceed National Emission Standards for Hazardous Air Pollutants thresholds, and would not have to comply with New Source Performance Standards.

During the construction of the new facilities, the Army would implement best management practices to prevent particulate matter from becoming airborne. Such precautions would include, but would not necessarily be limited to, using water to control dust during construction operations.

5.1.4 Noise

Short-term minor adverse effects on the nearby noise environment would be expected. These minor increases in noise would primarily be due to the use of heavy equipment during construction and demolition. The noise could be disruptive to Fort Allen employees and students (e.g., those using the Language Center). The minor noise increases would be temporary and would end when construction was completed. The noise would not be expected to be disruptive to

the residential neighborhood southwest of the installation; the closest residences are about 2,000 feet from the proposed site for the AFRC.

The Preferred alternative would require constructing two new facilities at Fort Allen. Individual pieces of construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. When multiple items of equipment operate concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience appreciable levels of construction noise. Given the temporary nature of the proposed construction activities, and the limited amount of noise that construction equipment would generate, this effect would be considered minor. Because daytime construction activities are exempt from Puerto Rico noise regulations, the activities would not be in violation. Heavy construction equipment would not be used during the nighttime hours.

5.1.5 **Geology and Soils**

Short-term minor adverse effects on soils would be expected. Best management practices (BMPs), such as silt fences and straw bales, and a Storm Water Pollution Prevention Plan would be implemented on the project site to prevent excessive soil erosion.

5.1.6 **Water Resources**

Surface Water. Short-term minor adverse effects on surface water quality would be expected. Land clearing and construction activities on previously undeveloped land could increase erosion and result in minor spills of dissolved solids and petroleum hydrocarbons. BMPs to control erosion and runoff would be used to minimize adverse effects on water quality. Examples of BMPs are silt fencing and hay bales to trap runoff and minimize erosion, and reseeding and revegetation of any disturbed ground following construction. No long-term effects on water quality would be expected because all construction activities would be conducted in accordance with Puerto Rico's Regulation for the Control of Erosion and the Prevention of Sedimentation and facility design would incorporate achieving the SILVER level of Leadership in Energy and Environmental Design (LEED) of the U.S. Green Building Council (DASA 2006). USAR (or its contractor) would present a erosion and sedimentation control plan to the Puerto Rico Environmental Quality Board for approval before the start of the project.

Hydrogeology/Groundwater. Short-term minor adverse effects on groundwater resources would be expected. Construction activities could result in the release of minor quantities of pollutants (e.g., dissolved solids, sediment, petroleum hydrocarbons) that could infiltrate to groundwater resources. The use of low-impact design and Puerto Rico-approved BMPs for storm water management would minimize potential effects. The construction activities would not be expected to affect potable water supplies at the installation. The nearest potable water wells are about 900 feet from the proposed construction site.

Floodplains. No effects on floodplains would be expected. The entire project footprint is outside the 100-year floodplain.

Coastal Zone Management. No effects on the coastal zone would be expected. The PRPB will make a final consistency determination after reviewing the Final EA.

5.1.7 **Biological Resources**

Short-term minor adverse effects on vegetation would be expected. Demolition and construction would not be expected to have a deleterious effect on wildlife. No wetlands would be affected.

The short-term effects of demolition and construction would include elevated noise and fugitive dust due to demolition and construction actions. These effects would be considered minor

because the actions would occur in close proximity to areas that already have human activity and lack sensitive species. The operational activities associated with the Preferred alternative would not be expected to affect biological resources.

5.1.8 Cultural Resources

No effects on cultural resources would be expected. Available information indicates a low likelihood for the site to have archaeological resources. The Preferred alternative, however, could affect as-yet-undiscovered, NRHP-eligible or potentially eligible archaeological sites or undocumented historic resources. The APE for the Preferred alternative appears to have been artificially leveled, but the extent of this disturbance is unknown. If cultural or historic resources were discovered during construction, PRARNG's ICRMP Standard Operating Procedure Number 7 (Inadvertent Discovery) would be followed.

5.1.9 Socioeconomics

Economic Development. Short-term minor beneficial effects on economic development would be expected. In the short term, the expenditures and employment associated with construction of the AFRC and the unit storage building on Fort Allen would increase ROI sales volume, employment, and income. A benefit of any type of development is the construction spending, especially if local labor and materials are used. Estimated construction costs for the Fort Allen AFRC, storage building, parking lot, and supporting facilities (such as electrical and mechanical systems and utility hookups) is \$14.6 million. The economic benefits would be short-term, lasting for only the duration of the construction period. Given the available labor force and the unemployment rate in the ROI and Puerto Rico as a whole, there would be a sufficient number of people to fill the construction jobs. The money spent during the construction phase would be cycled through the local economy through subsequent business spending and wages earned locally, creating further indirect and induced economic benefits.

Population. No effects on population would be expected. The proposed Preferred alternative would not change the ROI's or Puerto Rico's population. Employees and reservists would commute from their homes to the Fort Allen AFRC.

Housing. No effects on housing would be expected. The proposed Preferred alternative would not change the ROI's population and therefore would not affect the housing market. Employees and reservists would commute from their homes to the Fort Allen AFRC.

Quality of Life. Short-term minor adverse effects on quality of life would be expected. In the short term, noise and traffic from construction could be disruptive to Fort Allen employees and students and to the residents of the neighborhood bordering the installation to the southwest. The minor increases would be temporary and would end when construction was completed. The following paragraphs identify the expected effects for each of the key components of quality of life.

Law Enforcement, Fire Protection, and Medical Services. Short-term minor adverse effects on public services would be expected. The Preferred alternative would result in 25 to 50 additional personnel and support staff who would work at the proposed AFRC during normal weekday business hours in addition to the reservists who would train at the installation on weekends. Additional Military Police would be needed during annual training and weekend drills. The additional personnel also would be expected to generate patient visits to the Fort Allen Aid Station. More staff or facility space could be required to adequately serve the population and maintain adequate levels of service. Short-term minor adverse effects could occur in terms of decreased levels of service until any necessary additional security or medical clinic personnel were hired or facilities were expanded.

Short-term minor adverse effects on fire department resources could occur. The Preferred alternative would result in the construction of two buildings on Fort Allen. The effect on the Fort Allen Fire Department would depend on many factors, such as how many stories the buildings would have, the square footage of the buildings, the proximity of the buildings to other structures and the size of those structures, the types of sprinkler and alarm systems, the proximity of fire hydrants, and available water pressure. Many of these factors have not been finalized for the realignment action. Once the site location and specific design features of the buildings are determined, the Fort Allen Fire Department would be consulted to assess whether additional resources (e.g., a ladder truck, another engine company) would be required to provide sufficient firefighting and inspection services.

Schools. No effects would be expected. The Preferred alternative would not change the ROI population and therefore would not affect school enrollment. Employees and reservists would commute from their current homes to the AFRC.

Family Support, Shops and Services, and Recreation. Short-term minor adverse effects would be expected. The increase in on-post population would increase demand for Fort Allen services and recreational facilities, such as the mess hall and gymnasium. The effect would occur primarily on weekends. Levels of service could decrease, causing customers to experience longer wait times until additional personnel were hired or facilities were expanded to meet the increased demand.

Protection of Children. No effects on the protection of children would be expected. No children reside on Fort Allen. Implementation of the Preferred alternative would not result in disproportionate adverse environmental or health or safety risks to children.

5.1.10 Environmental Justice

No effects on environmental justice would be expected. Implementation of the Preferred alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

5.1.11 Transportation

Short- and long-term minor adverse effects on traffic would be expected. The Preferred alternative would slightly increase the number of permanent and weekend personnel stationed at Fort Allen. Only small, somewhat unnoticeable changes to the transportation system on-post and off-post would be expected with implementation of the Preferred alternative. The changes would be primarily attributable to construction vehicles, small changes in localized traffic patterns due to the additional permanent on-post personnel, and increases in weekend peak-period traffic, primarily at the Main Gate.

Traffic would increase because of the additional construction vehicles and traffic delays near construction sites. These effects would be temporary, ending with the construction phase. The local on-post and off-post road infrastructure would be adequate to support any increase in construction vehicle traffic. In addition, road closures or detours to accommodate utility system work would be expected, creating short-term traffic delays. Such effects would be minimized by placing construction staging areas where they interfere with traffic the least. All construction vehicles would be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate. Although the effects would be minor, the following measures would be implemented during construction:

- Route and schedule construction vehicle traffic to minimize conflicts with other traffic.
- Strategically locate construction material staging areas to minimize traffic effects.

Personnel and support staff working at the proposed AFRC during normal weekday business hours would generate approximately 60 to 120 privately owned vehicle trips per normal weekday

(ITE 2003), only a fraction of which would occur during peak traffic periods. This small increase in traffic would not affect the capacity of any of the gates, roadway segments, or intersections on-post or off-post.

Long-term minor effects on traffic would be expected after hours and on the weekends when training was conducted. These effects would primarily occur on Saturday morning and on Friday and Sunday evenings. The trainees would generate approximately 360 privately owned vehicle trips spread out over these periods (ITE 2003). None of the new trips would occur during weekday peak periods. Although this would be an increase in trips to and from the installation, it would account for only a fraction of the existing weekday traffic at any of the intersections or roadways affected. The additional traffic would not affect the capacity of any of the gates, roadway segments, or intersections on-post or off-post. Therefore, the effects would be considered minor.

Air Transportation, Rail Access, and Public Transit. Because the administrative personnel and weekend trainees would be residents of Puerto Rico, the Preferred alternative would have no effect on rail access or air traffic at Fort Allen.

5.1.12 Infrastructure

Long-term minor adverse effects on infrastructure systems serving Fort Allen would be expected under the Preferred alternative. The effects would result from the additional demand on utility systems and the generation of additional municipal solid waste and construction and demolition (C&D) debris at Fort Allen and the effect of such waste and debris on local landfills.

The potable water system and the wastewater discharge have sufficient capacity to meet the increased demand that the proposed action would produce. Using per capita consumption rates reported previously for potable water at Fort Allen, there is sufficient capacity to provide potable water for approximately 4,000 people. The wastewater discharge is connected to the publicly owned treatment works of the municipality of Juan Diaz, which has enough capacity to handle the additional discharge from the proposed AFRC. If necessary, PRARNG's potable water permit for Fort Allen would be modified to account for the additional usage created by use of the AFRC.

Fort Allen would limit demand increases on utility systems by installing water-conserving devices like low-flow shower heads, faucets, and toilets in new facilities and installing fixtures and air conditioning systems that comply with the Energy Policy Act of 2005 (Public Law 109-58). Goals for increased use of renewable energy sources, advanced utility metering, and procurement of energy-efficient equipment and building systems would be specified in all applicable contracts. Starting with Fiscal Year 2008, all vertical building construction projects would be expected to achieve the SILVER level of LEED of the U.S. Green Building Council (DASA 2006). This rating system is based on sustainable design and development concepts and assesses the degree to which the design of a building successfully incorporates consideration of matters such as sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Use of the LEED rating system improves the environmental and economic performance of facilities through the use of established and advanced industry principles, practices, materials, and standards.

The storm water collection system would be expanded as necessary to accommodate the additional volume of storm water that would be generated by the additional area of impervious surface on the installation (which would be approximately 1.4 acres, including newly constructed buildings and storage units).

Solid waste generated by operation of the AFRC under the Preferred alternative would not be substantial in terms of overall monthly or yearly quantity or area landfill capacity. Assuming 2 pounds of municipal solid waste per day for each trainee, trainees would generate approximately

23 tons of additional solid waste per year based on an estimated average of 3 days of training per week. This equates to a monthly average of approximately 2 tons of municipal solid waste.

Table 5-1 provides an estimate of the C&D debris that would be generated at Fort Allen by construction under the Preferred alternative. Per the requirements of an ACSIM memorandum (ACSIM 2006), a minimum of 50 percent of the estimated 3,000 tons of C&D debris would be diverted from Army-owned, non-installation-operated landfill sites. As a result of this sustainable management of waste in military construction, renovation, and demolition activities, approximately 63.5 tons of C&D debris would be disposed of in landfill sites in the area.

Table 5-1
Estimates of C&D debris generated at Fort Allen as a result of implementing the Preferred alternative

Construction activity	Admin area (ft ²)	C&D factor (lb/ft ²)	Estimated waste (lb)	Estimated waste (tons)
Construction	57,743	4.4	254,069	127
Renovation	N/A	20	N/A	N/A
Demolition	N/A	115	N/A	N/A
Gross total	57,743	N/A	254,069	127
Amount recycled (50%)	N/A	N/A	127,035	63.5
Net total C&D Debris generated	N/A	N/A	127,035	63.5

Area landfill life spans would be reduced from their current estimates because of solid waste generated under the Preferred alternative.

ROTHR. This EA examines the potential for the proposed action to introduce sources of EMI near the ROTHR, and it provides a qualitative description of potential effects of the proposed action on the ROTHR operations.

Both *far-field* and *near-field* EMI can affect the operation of the ROTHR. All activities associated with the proposed action, however, would be within the system's near field. Therefore, near-field EMI is the focus of this discussion. Near-field EMI can interfere with both the level and timing of signals arriving at the antenna array, limiting the system's ability to locate targets.

ROTHR EMI restrictions have been developed and applied to three zones surrounding the facility—the prohibited clear zone, prohibited zone, and restricted zone. The EMI prohibited clear zone enforces a one-degree clear-look angle and terrain-leveling criteria, and it prohibits EMI sources not directly related to ROTHR operations. The prohibited clear zone for the ROTHR at Fort Allen extends approximately 3,000 feet south of the facility. The EMI prohibited zone enforces a two-degree clear-look angle and prohibits EMI sources not directly related to ROTHR operations. The prohibited zone for the ROTHR extends approximately 3,000 feet south and 2,000 feet north *beyond* the prohibited clear zone (or to approximately 6,000 feet south of the antenna). The EMI restricted area extends 1 mile from the outer edge of the prohibited zone and restricts EMI sources through monitoring and coordinating with local commands and civilian agencies. Restrictions specifically associated with both the prohibited clear zone and prohibited zone include the following.

- Only essential construction required to carry on the ROTHR site mission is permitted.

- Only essential motor vehicle traffic is permitted, and all grounds maintenance equipment must be diesel-powered.
- Absolutely no two-stroke power equipment is permitted to operate.
- No radio transmitters are permitted.
- All conductors not associated with the receiving antenna or its supporting structure should be buried.
- Trees and brush in this area should be cut and maintained to ground level wherever environmental conditions permit.
- All support facility structures (fences, lighting poles, etc.) within this zone must not extend above a one-degree vertical clearance zone (two-degree vertical clearance for the prohibited zone).

All activities associated with the proposed action would occur primarily within the prohibited clear zone or prohibited zone. In general, no unusual sources of high-frequency signals or additional man-made electromagnetic sources would be expected with the implementation of the proposed action. The proposed action involves activities and the use of equipment, however, that could affect the operation of the ROTHHR and do not meet the outlined EMI restrictions. These activities and equipment include construction not critical to the ROTHHR operation, the extensive use of non-diesel vehicles, the use of two-stroke power equipment, the use of radio transmitters, overhead power lines, and uninterruptible power supply (UPS) devices. Based on experience, UPS devices can generate EMI, and all UPS devices rated above 10 kilowatts must be installed in a shielded enclosure. In addition, to ensure clear reception of signals at the ROTHHR, buildings constructed under the proposed action should be no higher than two stories.

In the early planning stages, no specific restrictions on the activities at Fort Allen may be implemented. As planning and designs for the AFRC continue to develop, the USAR and the Navy's ROTHHR Program Office will need to coordinate regarding the restrictions that will have to be enforced to ensure minimal interference with the ROTHHR operations.

5.1.13 Hazardous and Toxic Substances

No environmental or health effects resulting from the removal, handling, storage, and disposal of hazardous materials would be expected during new construction or the renovation and/or demolition of existing structures. All BRAC-related activities would be conducted in accordance with applicable regulatory requirements. In addition, demolition waste that contains ACM or LBP would be handled in accordance with all applicable regulatory requirements. Wastes generated during demolition activities that contain ACM would be handled and removed by a licensed contractor, and all hazardous materials would be properly disposed of at an authorized disposal site. All renovation wastes determined to be hazardous would be managed in accordance with applicable federal and local regulations.

No effects from pesticide use would be expected. Pesticides are not considered hazardous waste if used at their current location for their intended purpose, rather than being stored, disposed of as waste material, or allowed to migrate to their current location from the site of application.

Additional potentially hazardous materials that could be found on-site during BRAC-related activities include paints, asphalt, and fuel and motor oils for construction vehicles and equipment. The construction contractors would be responsible for preventing or responding to paint and fuel spills. The construction contractors would be responsible for collecting potentially hazardous materials used or found on-site and storing them in proper containers for a limited amount of time, properly disposing of them in accordance with applicable federal and local laws, and preventing spills of paint and fuels. Spills could be prevented by proper storage and handling, attention to the task at hand, and responsible driving. Wood and dry concrete can generate airborne particulates as they are cut or sanded. To protect against adverse effects, workers should

wear facemasks and safety glasses when performing these tasks. Wood and other construction materials are also flammable. Establishing smoking areas and prohibiting open flames near flammable materials would greatly reduce the risk of fire.

No adverse environmental effects from munitions and explosives of concern would be expected. No training areas are located in the vicinity of the Preferred alternative BRAC area.

5.2 PRISON SITE ALTERNATIVE

5.2.1 Land Use

No adverse effects on land use would be expected. Use of the Prison Site would change the land use from that of a former detention center to training, but the change would not introduce any conflicts with surrounding land uses.

5.2.2 Aesthetics and Visual Resources

Long-term minor beneficial effects on the aesthetics of Fort Allen would be expected.

Beneficial effects would be expected from replacing the existing dilapidated buildings, a deteriorating road, and numerous overhead utility lines with a new, modern building and utility service infrastructure. Other structures that give the area a generally run-down and uninviting appearance include the barbed-wire fence and security lighting, which would be removed. The grounds would also be better maintained under the Prison Site alternative. Overall, the appearance of the western portion of Fort Allen would be expected to improve under the alternative.

5.2.3 Air Quality

The effects on air quality would generally be the same as those stated for the Preferred alternative. Construction emissions from implementing the Prison Site alternative would be slightly greater than those from the Preferred alternative because in addition to facility construction, demolition of the existing detention center buildings and paved areas would be required to implement the Prison Site alternative.

5.2.4 Noise

The effects on the noise environment would generally be the same as those stated for the Preferred alternative. Because of the location of the Prison Site at the western edge of the installation, however, construction noise there would be expected to interfere with daily operations at Fort Allen (including the activities of the Language Center) less than at the Preferred alternative site.

5.2.5 Geology and Soils

The discussion of effects on area geology and soils for the Preferred alternative also applies to the Prison Site alternative.

5.2.6 Water Resources

Surface Water. Short-term minor adverse effects on surface waters would be expected. The proposed project would occur on the western end of Fort Allen on a 20-acre parcel. This area is currently developed. Land-clearing and construction activities could increase erosion as well as release dissolved solids, sediment, and petroleum hydrocarbons to storm water. BMPs and low-impact design would be used to minimize effects on surface waters.

Hydrogeology/Groundwater. The effects on groundwater resources would be the same as those stated earlier for the Preferred alternative.

Floodplain. No effects on floodplains would be expected.

Coastal Zone Management No effects on the coastal zone would be expected.

5.2.7 Biological Resources

Short-term minor adverse effects on biological resources would be expected. The effects would be the same as those described for the Preferred alternative.

5.2.8 Cultural Resources

The discussion of effects on cultural resources for the Preferred alternative also applies to the Prison Site alternative.

5.2.9 Socioeconomics

The discussion of effects on socioeconomics for the Preferred alternative also applies to the Prison Site alternative..

5.2.10 Environmental Justice

The discussion of effects on environmental justice for the Preferred alternative also applies to the Prison Site alternative.

5.2.11 Transportation

The discussion of effects on transportation and traffic for the Preferred alternative also applies to the Prison Site alternative.

5.2.12 Infrastructure

Under the Prison Site alternative, the effects on all infrastructure systems would be the same as those under the Preferred alternative, except for solid waste generation from demolition activities. The existing buildings previously occupied by the Department of Corrections would be demolished. In addition to the generation of an estimated 127 tons of C&D debris during the construction of 57,743 square feet of building space, the demolition of 12 existing Department of Corrections buildings would generate about 2,815 tons of C&D debris over the implementation phase of the BRAC action. According to existing Army guidelines, 50 percent of the C&D debris would be recycled, resulting in an estimated 1,470 tons that would be disposed of in landfill sites in the area. Table 5-2 provides an estimate of the C&D debris that would be generated at Fort Allen by C&D activities under the Prison Site alternative. Area landfill life spans would be reduced from their current estimates marginally more under the Prison Site alternative than under the Preferred alternative.

The potential effects of EMI from equipment and activities at the AFRC on the ROTH would be the same as those stated for the Preferred alternative.

5.2.13 Hazardous and Toxic Substances

The effects discussed for the Preferred alternative apply equally to the Prison Site alternative. In addition, if required for implementation of the alternative, the contents of the AST on the Prison Site parcel would be removed in accordance with applicable regulations.

5.3 NO ACTION ALTERNATIVE

5.3.1 Land Use

No adverse land use effects would be expected under the No Action alternative. No land use changes or new activities would result under the No Action alternative.

Table 5-2
Estimates of C&D debris generated at Fort Allen as a result of implementing the
Prison Site Alternative

Construction activity	Admin area (ft²)	C&D factor (lb/ft²)	Estimated waste (lb)	Estimated waste (tons)
Construction	57,743	4.4	254,069	127
Renovation	N/A	20	N/A	N/A
Demolition	48,960	115	5,630,400	2,815
Gross total	106,660		5,884,469	2,942
Amount Recycled (50%)	N/A	N/A	2,942,235	1,471
Net total C&D Debris Generated	N/A	N/A	2,942,235	1,471

5.3.2 Aesthetics and Visual Resources

No effects on aesthetic or visual resources would be expected. Under the No Action alternative, no changes to Fort Allen would occur.

5.3.3 Air Quality

No effect on air quality would result from implementation of the No Action alternative. No construction, changes in traffic, or changes in military operations at Fort Allen would be expected. Baseline ambient air quality conditions would be expected to continue.

5.3.4 Noise

No effect on the ambient noise environment would occur. No construction, changes in traffic, or changes in military operations at Fort Allen would be expected. Baseline ambient noise conditions would be expected to continue.

5.3.5 Geology and Soils

No effects on geology, topography, or soils would be expected under the No Action alternative.

5.3.6 Water Resources

Under the No Action alternative, no change from existing conditions would occur. Therefore, no effects on surface water, hydrogeology/groundwater, floodplains, or the coastal zone would result from the No Action alternative.

5.3.7 Biological Resources

No effects on biological resources would be expected. Under the No Action alternative, there would be no changes to the existing condition of biological resources on Fort Allen.

5.3.8 Cultural Resources

No effects on cultural resources would be expected under the No Action alternative.

5.3.9 Socioeconomics

No effects on socioeconomics or the protection of children would be expected. There would be no change in sales volume, income, employment, or population as a result of implementing the No Action alternative. There would be no change in demand for housing, law enforcement, fire

protection services, medical services, schools, family support services, shopping, or recreation facilities, and implementation of the No Action alternative would not result in disproportionate adverse environmental or health or safety risks to children..

5.3.10 Environmental Justice

No effects on environmental justice would be expected. Implementation of the No Action alternative would not result in disproportionate adverse environmental or health effects on low-income or minority populations.

5.3.11 Transportation

No effects on transportation resources would be expected under the No Action alternative because there would be no change to the road network or increase in traffic volume.

5.3.12 Infrastructure

No effects on infrastructure systems would be expected at Fort Allen under the No Action alternative. Facilities for BRAC would not be constructed, and neither the visiting population at Fort Allen nor demand on the post's utility systems would increase.

5.3.13 Hazardous and Toxic Substances

No effects on hazardous and toxic substances or their use, storage, or disposal would be expected from the No Action alternative. Current procedures would continue to be implemented in accordance with applicable laws.

5.4 CUMULATIVE EFFECTS

Cumulative effects are defined by CEQ in 40 CFR 1508.7 as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.”

Minor adverse cumulative effects on aesthetic and visual resources, air quality, the noise environment, water resources, and traffic and transportation would be expected. Minor beneficial cumulative effects on economic development would be expected from the combined increase in sales volume and employment of the projects. None of the adverse cumulative effects would be significant. No cumulative effects would be expected on other resources.

Two reasonably foreseeable projects have been identified: demolition of eight buildings surrounding the Preferred alternative site, and installation of a natural gas pipeline south of Fort Allen. The eight buildings that could be demolished are Buildings 209, 212, 221, 229, 230, 232, 233, and 234. It is estimated that demolition of the eight buildings would generate about 2,875 tons of solid waste. If 50 percent of the waste was diverted from landfills and recycled, about 1,438 tons of demolition waste would be sent to landfills from removal of the buildings from Fort Allen. Demolition of the eight buildings might be dependent on implementation of the Preferred alternative, and if that is the case, then the demolition would not occur or create a cumulative effect if the Prison Site alternative was implemented. Demolition of the buildings together with implementation of the Preferred alternative would create an adverse cumulative effect on solid waste generation and available landfill capacity. No timeline for demolition of the buildings has been set, so it is uncertain that construction of the new AFRC and demolition of the eight buildings would have adverse cumulative effects on aesthetic and visual resources, air quality and noise.

A Puerto Rico project to expand the natural gas infrastructure on the island is referred to as *Gasoducto del Sur*. An environmental impact statement for the project has been done and the

proposed path of the pipeline currently passes along or very near the southern boundary of Fort Allen. Construction of the pipeline would begin after all permitting for the project has been completed, but when that will be is uncertain, so it is unknown whether construction of the AFRC and the pipeline would be concurrent projects. If they were to occur concurrently, then cumulative adverse effects on noise, air quality, and traffic would be expected.

5.5 MITIGATION SUMMARY

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. The EA did not identified the need for mitigation measures for any of the affected resource areas. A set of recommendations related to operation of the ROTHr receiver antenna at Fort Allen, however, consists of those restrictions on activities within the prohibited clear zone and prohibited zone in front of the ROTHr at Fort Allen. Those recommended restrictions on activities at the AFRC to avoid interference with the ROTHr are listed below.

- Avoid the extensive use of non-diesel vehicles, two-stroke power equipment, and radio transmitters
- Avoid the installation and use of overhead power lines
- Place all uninterruptible power supply devices in shielded enclosures
- Design all new buildings to be no higher than two stories

SECTION 6.0

COMPARISON OF ALTERNATIVES AND CONCLUSIONS

6.1 COMPARISON OF THE ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

The consequences of the Preferred alternative (Proposed Action), Prison Site alternative, and No Action alternative are summarized below and in Table 6-1.

6.1.1 Proposed Action (Preferred Alternative)

No effects, adverse or beneficial, would be expected on the following resource areas from implementation of the Preferred alternative: land use, floodplains, coastal zone, population, housing, schools, protection of children, environmental justice, and cultural resources. If cultural or historic resources were discovered during construction, PRARNG's ICRMP Standard Operating Procedure (SOP) Number 7 (Inadvertent Discovery) would be followed. No environmental or health effects resulting from the removal, handling, storage, and disposal of hazardous materials, because all BRAC-related activities would be conducted in accordance with applicable regulatory requirements.

Short-term minor adverse effects would be expected on the following resources: the aesthetic and visual environment (from construction activity), air quality (from construction emissions), the noise environment near the construction area, soils, surface water and groundwater quality (from a small increase in erosion and potentially minor spills of dissolved solids and petroleum hydrocarbons from construction equipment), vegetation, the quality of life for personnel working near the construction area, public and ancillary services (from slightly increased demand), and traffic.

Long-term minor adverse effects would be expected on air quality (from operational emissions) and on infrastructure systems from the additional demand created by the increased personnel load at Fort Allen and from the generation of solid waste and construction and demolition debris that would reduce available landfill capacity.

A long-term minor beneficial effect on the aesthetics of Fort Allen would result from construction of a modern building with attractive landscaping.

Short-term minor beneficial effects on economic development would result from expenditures and employment associated with construction of the AFRC.

Operations at the AFRC would have the potential to introduce sources of EMI near the ROTH and possibly interfere with the operation of the ROTH.

6.1.2 Prison Site Alternative

The effects expected from implementation of the Prison Site alternative would be the same as those for the Preferred alternative, except for the following differences.

Under the Prison Site alternative, additional solid waste would be generated from demolition of the 12 existing Department of Corrections buildings. Their demolition would generate about 2,815 tons of debris that would be recycled or disposed of in landfills.

**Table 6-1
Summary of potential environmental and socioeconomic consequences**

Resource Area	Alternatives		
	No Action	Preferred	Prison Site
Land use	No effects	No effects	No effects
Aesthetics and visual resources	No effects	Short-term minor adverse; long-term minor beneficial	Short-term minor adverse; long-term minor beneficial
Air quality	No effects	Short- and long-term minor adverse	Short- and long-term minor adverse
Noise	No effects	Short-term minor adverse	Short-term minor adverse
Geology and soils	No effects	Short-term minor adverse	Short-term minor adverse
Water resources			
• Surface water	No effects	Short-term minor adverse	Short-term minor adverse
• Groundwater	No effects	Short-term minor adverse	Short-term minor adverse
• Floodplains	No effects	No effects	No effects
• Coastal zone	No effects	No effects	No effects
Biological resources			
• Vegetation	No effects	Short-term minor adverse	Short-term minor adverse
• Wildlife	No effects	No effects	No effects
• Aquatic biota	No effects	No effects	No effects
• Threatened and endangered species	No effects	No effects	No effects
• Migratory birds	No effects	No effects	No effects
• Wetlands	No effects	No effects	No effects
Cultural resources	No effects	No effects	No effects
Socioeconomics			
• Economic development	No effects	Short-term minor beneficial	Short-term minor beneficial
• Population	No effects	No effects	No effects
• Housing	No effects	No effects	No effects
• Quality of life	No effects	Short-term minor adverse	Short-term minor adverse
• Protection of children	No effects	No effects	No effects
Environmental Justice	No effects	No effects	No effects
Transportation	No effects	Short- and long-term minor adverse	Short- and long-term minor adverse
Infrastructure	No effects	Long-term minor adverse	Long-term minor adverse
Hazardous and toxic substances	No effects	No effects	No effects
Cumulative Effects	No effects	Short-term minor	Short-term minor

Implementation of the Prison Site alternative would have more of a beneficial effect on the aesthetics of Fort Allen in that old, deteriorating buildings, roads, walkways, and other infrastructure would be replaced with a modern AFRC and attractive landscaping.

6.1.3 No Action Alternative

No effects on any of the resource areas considered in the EA would be expected to result from implementation of the No Action alternative.

6.2 CUMULATIVE EFFECTS

Two reasonably foreseeable projects were identified that could result in cumulative effects on resource areas. The projects are the installation of a natural gas pipeline near the southern boundary of Fort Allen, a project referred to as *Gasoducto del Sur*, and the demolition of eight buildings surrounding the Preferred alternative site. These projects could result in minor adverse cumulative effects on aesthetic and visual resources, air quality, the noise environment, water resources, and traffic and transportation. The projects could also result in minor beneficial cumulative effects on economic development. None of the adverse cumulative effects would be significant. No cumulative effects would be expected on other resources.

6.3 MITIGATION

The EA did not identify the need for mitigation measures for any of the affected resource areas. Restrictions on activities within the prohibited clear zone and prohibited zone in front of the ROTHHR, as proposed by the Navy, however, are recommended to be considered by USAR and PRARNG to avoid interference with operation of the ROTHHR receiver antenna at Fort Allen.

6.4 CONCLUSIONS

Based on the analysis performed in the EA, implementation of the Preferred alternative or the Prison Site alternative would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. Preparation of an Environmental Impact Statement is not required. Issuance of a Finding of No Significant Impact would be appropriate.

SECTION 7.0

REFERENCES

- ACSIM (Department of the Army, Assistant Chief of Staff for Installation Management). 2006. *Sustainable Management of Waste in Military Construction, Renovation, and Demolition Activities*. Memorandum dated February 6, 2006. Department of the Army, Assistant Chief of Staff for Installation Management, Army Pentagon, Washington, DC.
- BLS (Bureau of Labor Statistics). 2006. *Local Area Unemployment Statistics*. <<http://www.bls.gov>>. Accessed January 5, 2007.
- Burgos Diaz, Maricely, Real Property Clerk/Technician, Camp Santiago Facilities Engineering Office. 2007. Personal communication. January 10, 2007.
- CEQ (Council on Environmental Quality). 1997. *Environmental Justice Guidance Under the National Environmental Policy Act*. Council on Environmental Quality, Executive Office of the President, Washington, DC.
- CIA (Central Intelligence Agency). 2006. *The World Factbook*. <<https://www.cia.gov/cia/publications/factbook/index.html>>. Accessed January 8, 2007.
- DASA (Deputy Assistant Secretary of the Army). 2006. *Sustainable Design and Development Policy Update—SpiRiT to LEED Transition*. Memorandum dated January 5.
- Fort Allen. 2006. *Fort Allen Army Defense Environmental Restoration Program Installation Action Plan* [FY 2006]. Fort Allen, Puerto Rico. February.
- Goodwin, R.C., M.A. Simons, and E.S. Onge. 1997. Archaeological Survey of Approximately 125 Acres within the Vieques Naval Reservation, Vieques Island, Puerto Rico; and 180 Acres at Fort Allen, Juana Díaz, Puerto Rico. R. Christopher Goodwin & Associates, Inc., Frederick, Maryland. Submitted to Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia.
- Harris, Cecil M. 1998. *Handbook of Acoustical Measurement and Noise Control*.
- ITE (Institute of Transportation Engineers). 2003. *Transportation Engineers Trip Generation Manual*, 7th ed.
- NCES (National Center for Education Statistics). 2006. *Common Core of Data: Search for Public Schools*. <<http://nces.ed.gov/ccd/schoolsearch/>>. Accessed January 8, 2007.
- PRARNG (Puerto Rico Army National Guard). 2006. *Puerto Rico National Guard Official Web site*. <<https://www.pr.ngb.army.mil/>>. Accessed January 10, 2007.
- PRARNG (Puerto Rico Army National Guard). 2008. *FISP Report Puerto Rico*. Facilities Inventory and Support Plan (FISP), Puerto Rico Army National Guard. Report Generated September 12, 2008.
- Puerto Rico Environmental Quality Board (EQB). 1987. Regulation for the Control of Noise Pollution (Amended)
- U.S. Army. 2007. *Environmental Quality: Environmental Protection and Enhancement*. Army Regulation 200–1. Headquarters, Department of the Army, Washington, DC. December.
- USACE (U.S. Army Corps of Engineers), Mobile District. 1998. *Final Environmental Assessment for the Relocation of Special Operations Command, South and Selected U.S. Army*

South Elements from the Republic of Panama to U.S. Naval Station Roosevelt Roads, Puerto Rico and Other Locations. USACE, Mobile District, Mobile, Alabama.

U.S. Army Environmental Center (USAEC) 1997. *Final Phase I Site Inspection Report for Sites Identified in the 1994 Preliminary Assessment Report and Areas of Concern 3, 8, 9 Fort Allen, Juana Díaz, Puerto Rico.* USAEC, Aberdeen Proving Ground, Maryland. January.

U.S. Census Bureau. 2000a. *Census 2000 Summary Files 1 and 3.* <<http://factfinder.census.gov/>>. Accessed January 5, 2007.

U.S. Census Bureau. 2000b. *PR-99-1: Estimates of the Population of Puerto Rico Municipios, July 1, 1999, and Demographic Components of Population Change: April 1, 1990 to July 1, 1999* (includes revised April 1, 1990, census population counts). U.S. Census Bureau, Population Studies Branch, International Programs Center, Population Division, Washington, DC.

U.S. Census Bureau. 2005. *2005 Puerto Rico Community Survey.*

<http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed January 5, 2007.

USDA (U.S. Department of Agriculture). 1979. Soil Survey for the Ponce Area of Southern Puerto Rico. Soil Conservation Service in coordination with the University of Puerto Rico, College of Agricultural Sciences.

USEPA (U.S. Environmental Protection Agency). 1971. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances.* Publication NTID300.1. U.S. Environmental Protection Agency, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 2006. AirDATA Web site. <<http://www.epa.gov/air/data/index.html>>. Accessed December 13, 2006.

USFWS (U.S. Fish and Wildlife Service). 2007. National Wetlands Inventory data. http://wetlandsfws.er.usgs.gov/imf/imf.jsp?site=NWI_PRVI. Accessed April 13, 2007.

USGS (U.S. Geological Survey). 1977. Ponce, Puerto Rico 7.5-minute topographic quadrangle map.

Welcome to Puerto Rico.org. 2007. *Welcome to Puerto Rico!* <<http://welcome.topuertorico.org/index.shtml>>. Accessed January 8, 2007.

SECTION 8.0

LIST OF PREPARERS

V. Regno Arulgnanendran, P.E.

Ph.D., Civil (Environmental) Engineering, New Mexico State University
M.S./D.I.C., Public Health Engineering, Imperial College of Science, Technology, and Medicine,
University of London
M. Eng., Construction Engineering and Management, Asian Institute of Technology
B.S., Civil Engineering, with Honors, University of Ceylon, Sri Lanka, 1975
Registered Professional Engineer, Virginia and New Mexico
Years Experience: 24

Clint Boschen

M.S., Biological Sciences, Florida State University
B.S., Biology, Virginia Polytechnic Institute and State University
Years of Experience: 10

Michelle Cannella

Graduate Studies, Mineral Economics, Pennsylvania State University
B.S., Mineral Economics, Pennsylvania State University
Years of Experience: 10

Chris Espenshade

M.A., Anthropology, University of Florida
B.A., Anthropology, Wake Forest University
Years of Experience: 25

Dean Goodin, Ph.D.

Ph.D., Environmental Soil Science, Louisiana State University
B.S., Environmental Management Systems, Louisiana State University
Years of Experience: 7

Greg Hippert

B.S., Earth Science, University of North Carolina at Charlotte
Years of Experience: 12

Jennifer Jarvis

B.S., Environmental Resource Management, Virginia Polytechnic Institute and State University
Years of Experience: 7

Timothy Lavallee

M.S., Environmental Health, Tufts University
B.S., Mechanical Engineering, Northeastern University
Years of Experience: 15

Martha Martin

B.A., English, Capital University
Years of Experience: 27

Samuel Pett

M.S., Environmental Science and Policy, University of Massachusetts/Boston

B.S., Wildlife Biology and Zoology, Michigan State University

Years of Experience: 16

Benjamin Richard

B.S., Wildlife Management, Louisiana State University

Years of Experience: 2

Jeff Strong

M.S., Technical and Scientific Communication, James Madison University

B.A., Computer Information Systems, Eastern Mennonite University

Years of Experience: 17

Rachel Wiese

B.S., Environmental Science, Iowa State University

Years of Experience: 1

Paul Wilbur, J.D.

J.D., Wayne State University Law School

B.A., English, University of Michigan

Years of Experience: 29

SECTION 9.0

PERSONS CONSULTED

Alvarado, Israel, Puerto Rico Army National Guard, April 2007.

Borchardt, David, U.S. Army Reserves, 2007.

Burgos Diaz, Maricely, Real Property Clerk/Technician, Camp Santiago Facilities Engineering Office, January 10, 2007.

Diaz, Marisol, Environmental Section, Puerto Rico Army National Guard, San Juan, Puerto Rico. September 2008.

Lanczy, Tibor, National Guard Bureau, July 2007.

Mejia, Ileana, Environmental Section, Puerto Rico Army National Guard, San Juan, PR. November 2006.

Mendez, Miguel, National Guard Bureau. July 2007.

Ramos, José, Master Planner, Puerto Rico Army National Guard, San Juan, PR. November 2006.

Silva, José, Utilities, Puerto Rico Army National Guard, Environmental Section, San Juan, PR. November 2006.

Velazquez, MAJ Jose E., Facility Design & Project Management, Puerto Rico Army National Guard, San Juan, PR. April 2007.

SECTION 10.0

DISTRIBUTION LIST

Puerto Rico Agencies

Mr. Carlos W. López Freytes
Chairman, Environmental Quality Board
1308 de Leon Avenue
State Road 8838
Sector el Cinco
Río Piedras, PR 00926

Ing. Angel David Rodriguez, President
Puerto Rico Planning Board
Minillas Government Center
Edificio Norte, Piso 16
San Juan, PR 00940-1119

Mr. Javier Velez-Arrocho, Secretary
Puerto Rico Department of Natural and Environmental Resources
Carretera Núm. 8838, Km 6.3
Sector El Cinco
Río Piedras, PR 00906

Dr. Jose Luis Vega
Executive Director
Puerto Rico Institute of Culture
P.O. Box 9024184
San Juan PR 00902-4184

Mr. Jose A. Hernandez, Director
Carnegie Library
Constitution Avenue #7
San Juan, PR 00901-2010

Federal Agencies

Edwin Muníz
Field Supervisor, USFWS
Boquerón Ecological Services Field Office
P.O. Box 491
Boquerón, PR 00622

APPENDIX A
Defense Base Closure and Realignment Commission Recommendations

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A Bill to Make Recommendations to the President Under the Defense Base Closure and Realignment Act of 1990

Chapter I. Department of the Army Recommendations

Army National Guard Readiness Center in Williamsport, PA, if the Commonwealth of Pennsylvania decides to relocate those units.

- c. **Close the Reese United States Army Reserve Center in Chester, PA, the United States Army Reserve Organizational Maintenance Shop in Chester, PA, the Germantown Veterans Memorial United States Army Reserve Center in Philadelphia, PA, the Horsham Memorial United States Army Reserve Center in Horsham, PA, the 1LT Ray S. Musselman Memorial United States Army Reserve Center in Norristown, PA, and the North Penn Memorial United States Army Reserve Center in Norristown, PA, and relocate units to a new Armed Forces Reserve Center with an organizational maintenance facility at Willow Grove Joint Reserve Base, PA. The Army shall establish an enclave at Willow Grove Joint Reserve Base, PA, to retain essential facilities to support activities of the Reserve Components.**
- d. **Close the Wilson Kramer United States Army Reserve Center in Bethlehem, PA, and the United States Army Reserve Organizational Maintenance Shop in Bethlehem, PA, and relocate units to a new United States Army Reserve Center with an organizational maintenance facility in the Allentown/ Bethlehem, PA area, if the Army is able to acquire suitable land for the construction of the facilities.**
- e. **Close the Philadelphia Memorial United States Armed Forces Reserve Center in Philadelphia, PA, the Philadelphia Memorial United States Armed Forces Reserve Center Organizational Maintenance Shop in Philadelphia, PA, and relocate Army Reserve and Marine Corps Reserve units to a new Armed Forces Reserve Center with an organizational maintenance facility in Bristol, PA, on the existing Bristol Veterans Memorial Reserve Center site.**
- f. **Close the Serrenti Memorial United States Army Reserve Center in Scranton, PA, the Serrenti Memorial United States Army Reserve Organizational Maintenance Shop in Scranton, PA, the United States Army Reserve Center in Wilkes-Barre, PA, the United States Army Reserve Organizational Maintenance Shop in Wilkes-Barre, PA, and relocate units to a new Armed Forces Reserve Center with an organizational maintenance facility in Scranton, PA, if the Army is able to acquire suitable land for the construction of the facilities.**

41. **RESERVE COMPONENT TRANSFORMATION IN PUERTO RICO (ARMY 85).**⁴⁶

- a. **Close the US Army Reserve Center 1LT Paul Lavergne, Bayamon, PR and relocate the 973^d Combat Support (CS) Company into a new Armed Forces Reserve Center on United States Army Reserve property in Ceiba, PR, and relocate all other units into a new Armed Forces Reserve Center (AFRC) on Fort Buchanan, PR. **Realign the US Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, PR, by relocating the 807th Signal Company into a new Armed Forces Reserve Center on Fort Buchanan, PR. The new AFRC on Fort Buchanan, PR shall have the capability to accommodate units from the Puerto Rico Army National Guard San Juan Readiness Center, San Juan, PR, if Puerto Rico decides to relocate those National Guard units. The new AFRC facility in Ceiba, PR shall have the capability to accommodate Puerto Rico National Guard units from the following PRARNG Readiness Centers: Humacao, Juncos, and Ceiba, PR, if Puerto Rico decides to relocate those National Guard units.****
- b. **Realign United States Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, PR, by relocating the 8th Brigade, 108th DIV (IT) to a new Armed Forces Reserve Center on Fort Allen, PR.**
- c. **Realign United States Army Reserve Center Ramey, Aguadilla, PR by relocating the 249th Quartermaster Company into a new Armed Forces Reserve Center in Mayaguez, PR, if the Army is able to acquire suitable land. The new facility shall have the capability to accommodate Puerto Rico National Guard units from the Puerto Rico Army National Guard Readiness Center Mayaguez, if Puerto Rico decides to relocate those National Guard units.**

⁴⁶ By Motion G-11-1, the Commission found the recommendation of the Secretary of Defense consistent with the Final Selection Criteria and Force Structure Plan.

APPENDIX B
Agency Correspondence

[Note: The two enclosures that follow the first agency coordination letter were sent with each of the letters to the different agencies. The enclosures are not duplicated with each letter included in this appendix, however.]



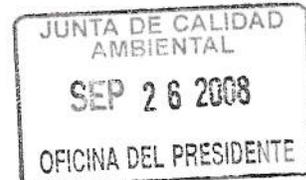
REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BUCHANAN
218 BROOKE STREET
FORT BUCHANAN, PUERTO RICO 00934-4206

September 25, 2008

Directorate of Public Works

Hon. Javier J. Rua Jovet
Chairman, Environmental Quality Board
1375 Ponce De León Avenue
State Road No. 8838
Sector El Cinco,
Rio Piedras, P.R. 00926-2604



Dear Mr. Rua:

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur in the Commonwealth of Puerto Rico. The President of the United States approved these recommendations and forwarded them to Congress on September 15, 2005. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented, as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

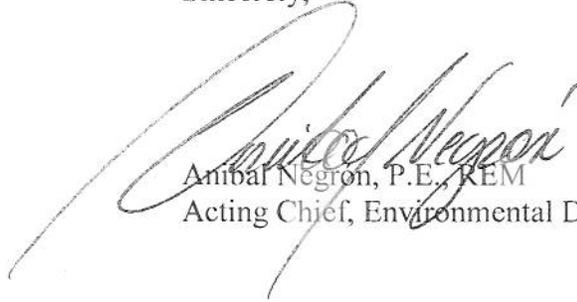
In accordance with the National Environmental Policy Act (NEPA), the U.S. Army is performing an environmental assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Allen, Juana Diaz, Puerto Rico (see the figure below). The EA will determine the impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Allen and the surrounding area. Details of the proposed action are provided in the enclosure.

On the basis of a review of information available on the Internet, from the U.S. Fish and Wildlife Service, and from Fort Allen, there is no evidence that endangered or threatened species or species of concern in the Commonwealth of Puerto Rico would be adversely affected by the proposed action. Freshwater marsh and swamp south of Fort Allen and habitat for the least tern (*Sterna albifrons*) west of the installation would not be disturbed by construction or operation of the proposed AFRC.

The U.S. Army Corps of Engineers (USACE), Mobile District, respectfully requests your input regarding the potential effects of the proposed action on the resources of concern to your agency and issues that your agency thinks should be addressed in the EA. The USACE, Mobile District, is developing the EA, and will incorporate any input that you can provide while the document is being prepared. Please provide your input within 30 days of receipt of this correspondence if at all possible. I will provide you with a copy of the final EA for your review and comment.

For additional information or questions regarding the referenced, please feel free to contact Mr. Yamil E. Hernandez, A.I.T., M. Arch., Conservation Manager for US Army Reserve at yamil.hernandez@us.army.mil, or telephone: (787) 707-2553 or (787) 707-3575.

Sincerely,



Anibal Negron, P.E., REM
Acting Chief, Environmental Division

Enclosures

ENCLOSURE 1



Location Figure of Fort Allen (USGS Ponce [PR] Quadrangle map)

ENCLOSURE 2

Fort Allen AFRC Description of Proposed Actions

DESCRIPTION OF THE PROPOSED ACTION

This section describes the Army's Preferred Alternative for carrying out the BRAC Commission's recommendation to "Realign United States Army Reserve Center Captain E. Rubio Junior, Puerto Nuevo, PR, by relocating the 8th Brigade, 108th DIV (IT) to a new Armed Forces Reserve Center on Fort Allen, PR."

Construction. The Army proposes to construct and operate a 150-member Armed Forces Reserve Center (AFRC) and an unheated storage building for use by Army Reserve and Army National Guard units at Fort Allen, Puerto Rico. The AFRC would provide up to 55,037 square feet of interior space, and the unheated storage building would provide up to 2,706 square feet of space. The buildings would be of permanent construction with ventilation, air conditioning, plumbing, mechanical, security, and electrical systems. Walkways, curbs and gutters, and storm drainage would be included in the project. The project would also provide adequate parking for all military and privately owned vehicles. Military vehicles that would use the parking facilities at the AFRC include a small number of buses or trucks used to transport Soldiers and supplies. No military vehicles would be assigned to the AFRC, and the AFRC at Fort Allen would not have a military equipment parking (MEP) site. Work performed to support the facilities would include land clearing, paving, fencing, general site improvements, and extension of utilities to serve the project. The Army would incorporate force protection (physical security) measures into the design of the facility. Construction of the AFRC is estimated to begin in May 2009 and to be completed by August 2010.

As part of the long-range plan for accommodating future training needs, the Army would demolish eight small buildings in the vicinity of the proposed AFRC. The eight buildings have a total of about 50,000 square feet.

Preferred Siting. The AFRC would be on the south-central portion of Fort Allen on a 10-acre site. The site, lying immediately north of Blair Avenue/Street #1 where Route 158 enters the installation, is bounded by Blair Avenue/Street #1, 5th Street, 7th Street, and Avenue A. **Figure 2-1** shows the location of the proposed site. The proposed site is centrally located and proximate to PRARNG facilities on the installation.

Operations. The proposed AFRC at Fort Allen would support operations of the 8th Brigade (Multifunctional), 108th Division (Institutional Training), a United States Army Reserve (USAR) training unit. The brigade consists of approximately 150 personnel. PRARNG units, including but not limited to the 201st Regiment, would also train at the new AFRC. The PRARNG 201st RTI (Regional Training Institute) has a staff of 48 and average student load of 100.

Heaviest use of the AFRC would be on weekends. Initially, the student load would average about 100 students on two weekends per month, with additional 2-week courses for another 100 students four times per year. Most students would be from Puerto Rico, but Soldiers from any branch of the military could attend classes at the new AFRC. The long-term student load would vary depending on military needs, deployments, and enlistments. Training activities conducted during drill weekends would include Military Occupational Specialty training in Soldiers' skills (such as maintenance and communications), required briefings, physical training, mentoring, and evaluations. Daily operations (Monday through Friday) would include administrative, training, and maintenance support of unit missions and requirements; recruiting; and preparation for drill weekends, all conducted by a small full-time staff.

ALTERNATIVES

Introduction

A bedrock principle of NEPA is that an agency should consider 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 ready for decision making (any necessary preceding events having taken place), must be affordable and capable of being implemented, and must meet the purpose of and need for the action. The following discussion identifies alternatives that the Army considered and whether they are feasible and, therefore, subject to detailed evaluation in this EA.

The Army assessed alternatives to the proposed action on the basis of three criteria: whether the alternative could physically accommodate realigned units, whether the alternative site was suitable for construction, and whether the alternative could accommodate the schedule. In this section, the Army presents its development of alternatives, addresses alternatives to the proposed action, and describes the No Action Alternative.

No Action Alternative

Inclusion of the No Action Alternative is prescribed by CEQ regulations. The No Action Alternative serves as the benchmark against which federal actions can be evaluated. No action assumes that the Army would continue its mission at Fort Allen as it existed in fall 2005, with no unit relocations and no new facilities constructed. The brigade proposed for relocation under the proposed action would continue to operate from its current facilities. Because the BRAC Commission's recommendations must be implemented, continuing the fall 2005 Fort Allen mission is not possible without further Congressional action; it serves only as a baseline alternative against which other alternatives can be evaluated. The No Action Alternative is evaluated in detail in this EA.

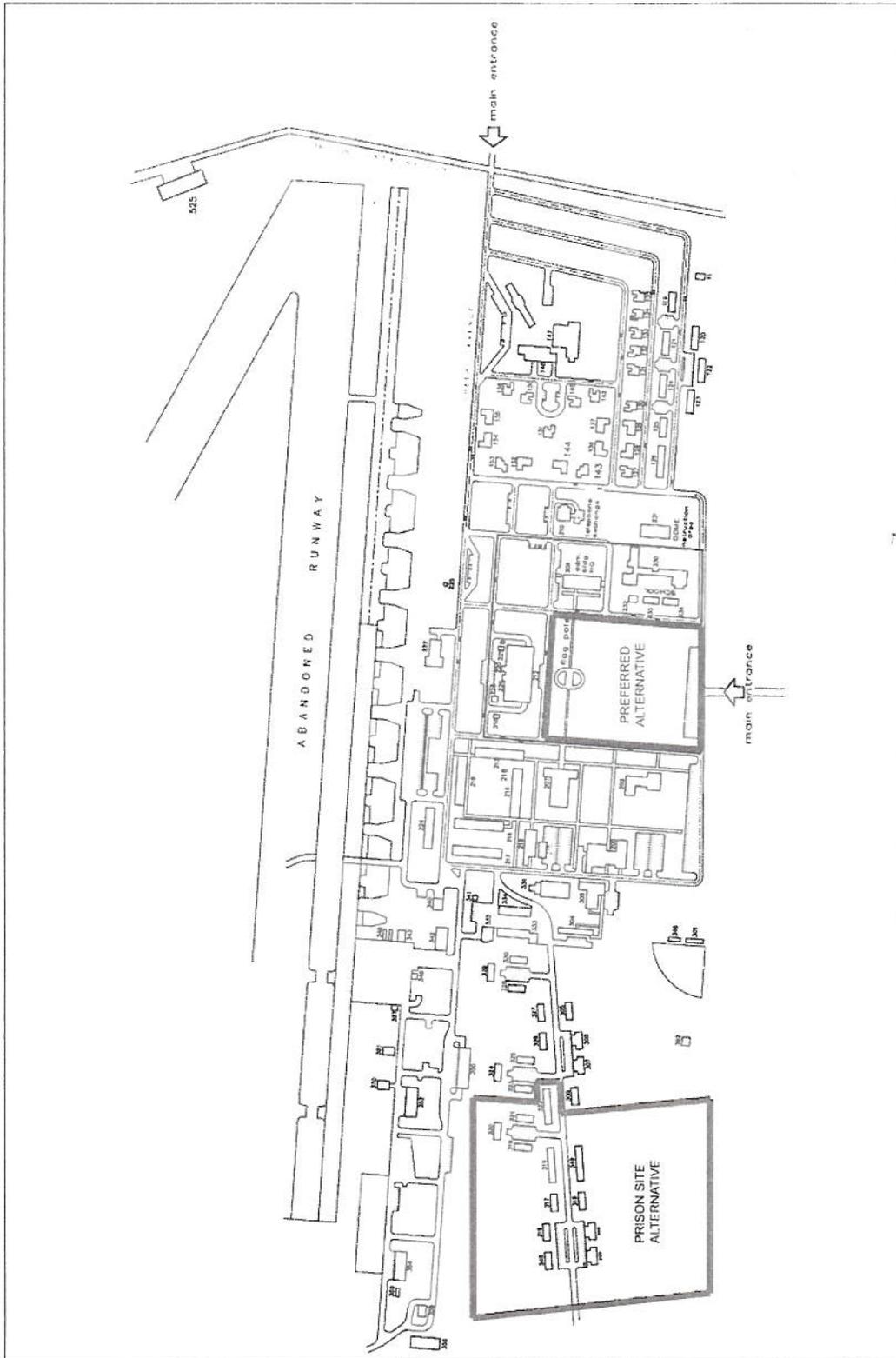
Preferred Alternative

The Army proposes to construct and operate a 150-member AFRC and an unheated storage unit at Fort Allen, Juana Díaz, Puerto Rico. The Preferred Alternative is further described in Section 2.0.

Additional Alternatives

Alternative Locations. The BRAC Commission's recommendation specified that the AFRC be constructed on Fort Allen. Accordingly, no locations other than Fort Allen may be considered for the AFRC.

Prison Site Alternative. Review of sites on Fort Allen for construction and operation of the AFRC produced one candidate parcel as an alternative to the preferred site identified in Section 2.0. Under this alternative, the AFRC would be constructed on the site of a former detention center on the southwestern portion of Fort Allen (**Figure 2-1**). The site contains numerous buildings, all of which are abandoned and that would have to be demolished, and is somewhat isolated from other facilities on the installation. The Prison Site was identified for use in the event that use of the preferred site was found to have significant environmental impacts, and the alternative is evaluated in detail in this EA.



Proposed Site Map

LEGEND

□ Potential BRAC Footprint

Figure 2-1

Source: Fort Allen, 2006.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BUCHANAN
218 BROOKE STREET
FORT BUCHANAN, PUERTO RICO 00934-4206

September 25, 2008

Directorate of Public Works

Mr. Jose Luis Vega
State Preservation Officer
P.O. Box 9066581
San Juan PR 00906-6581

Dear Mr. Vega:

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur in the Commonwealth of Puerto Rico. The President of the United States approved these recommendations and forwarded them to Congress on September 15, 2005. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented, as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

In accordance with the National Environmental Policy Act (NEPA), the U.S. Army is performing an environmental assessment (EA) for the implementation of the 2005 BRAC Commission recommendations for Fort Allen, Juana Diaz, Puerto Rico (see enclosure). The EA will determine the impacts that implementation of the proposed action could have on environmental, natural, cultural, and socioeconomic resources of Fort Allen and the surrounding area. Details of the proposed action are provided in the enclosure.

The project will house several training units, school type activity, from both the US Army Reserve and the Puerto Rico Army National Guard. The building will be located at the former Fort Allen parade field, but will only occupy half of the site to allow for future expansion at the area. The proposal will change the current appraisal of the Fort Allen original master plan design; however, integrity of the area was previously compromised by recent construction of classroom type buildings. These buildings are located east of the proposed site and their design did not consider or followed original design elements for the area (see cd with photos enclosure). Additionally, the main post entrance gate south of the reference site is closed, and is not expected to be opened due to encroachment issues from new construction, and relocated to the east of the base compound accessing directly from Road No. 149. For this reason, and due to previous construction activity and disturbance of the preferred construction site, we believe that the proposed action will Not Likely Adversely Affect any cultural resources.

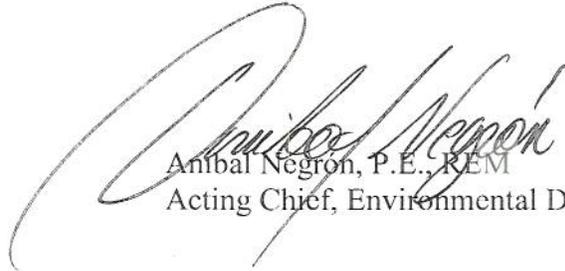
RECEPCION

2008 SEP 29 ... 9:40
OFFICE OF THE
CHIEF OF STAFF
GENERAL HISTORIC

The U.S. Army Corps of Engineers (USACE), Mobile District, respectfully requests your input regarding the potential effects of the proposed action on the resources of concern to your agency and issues that your agency thinks should be addressed in the EA. The USACE, Mobile District, is developing the EA, and will incorporate any input that you can provide while the document is being prepared. Please provide your input within 30 days of receipt of this correspondence if at all possible. Upon completion of the final EA a copy will be provided for your review and comment.

For additional information or questions regarding the referenced, please feel free to contact Mr. Yamil E. Hernandez, A.I.T., M. Arch., Conservation Manager for US Army Reserve at yamil.hernandez@us.army.mil, or telephone: (787) 707-2553 or (787) 707-3575.

Sincerely,



Anibal Negron, P.E., REM
Acting Chief, Environmental Division

Enclosures



REPLY TO
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US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BUCHANAN
218 BROOKE STREET
FORT BUCHANAN, PUERTO RICO 00934-4206

September 25, 2008

Directorate of Public Works

Ing. Ángel David Rodríguez, President
Puerto Rico Planning Board
Centro Gubernamental Minillas
Edif. Norte, Piso 16
San Juan PR 00940-1119

Dear Mr. Rodríguez:

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur in the Commonwealth of Puerto Rico. The President of the United States approved these recommendations and forwarded them to Congress on September 15, 2005. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented, as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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Sincerely,



Anibal Negrón, P.E., REM
Acting Chief, Environmental Division

Enclosures



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US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BUCHANAN
218 BROOKE STREET
FORT BUCHANAN, PUERTO RICO 00934-4206

September 25, 2008

Directorate of Public Works

Hon. Javier Vélez Arocho, Secretary
Department of Natural and Environmental Resources
Carretera Núm. 8838, KM 6.3
Sector El Cinco,
San Juan, PR 00906-6600

Dear Mr. Arocho:

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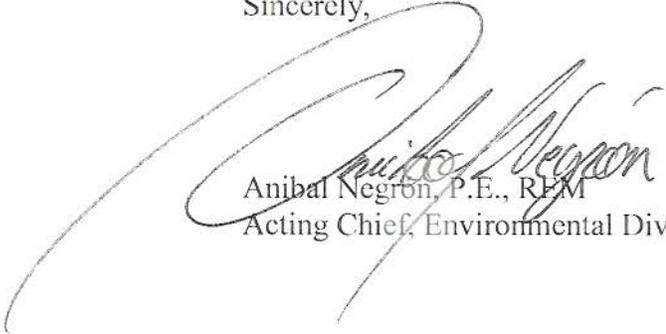
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Sincerely,

A large, stylized handwritten signature in black ink, appearing to read "Anibal Negrón". The signature is written over the typed name and title.

Anibal Negrón, P.E., REM
Acting Chief, Environmental Division

Enclosures



REPLY TO
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US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BUCHANAN
218 BROOKE STREET
FORT BUCHANAN, PUERTO RICO 00934-4206

September 25, 2008

Directorate of Public Works

Mr. Edwin E. Muñiz
Field Supervisor,
United States Department of Interior,
Fish and Wildlife Service
Boquerón Field Office
P.O. Box 491
Boquerón, PR 00622

Dear Mr. Muñiz,

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that certain realignment actions occur in the Commonwealth of Puerto Rico. The President of the United States approved these recommendations and forwarded them to Congress on September 15, 2005. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented, as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

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Sincerely,



Anibal Negron, P.E., REM
Acting Chief, Environmental Division

Enclosures