



# Notice of Availability

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Environmental Assessment and Finding of *No Significant Impact* for the Hospital Energy Plant (HEP) at Walter Reed Army Medical Center (WRAMC), Washington, D.C.

The United States Government, Health Facilities Planning Office Northeast, has prepared an Environmental Assessment (EA) with the assistance of Mr. Dan Chisholm of the Motor & General Institute (Inc.) evaluating the potential impacts from the proposed action of erecting a Hospital Energy Plant (HEP). The HEP will supply WRAMC Medical Center with an emergency power supply and system infrastructure in accordance with Military Handbook 1191 and the National Fire Protection Agency requirements. The EA has been prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended. It includes an assessment of existing conditions and an evaluation of the potential impacts to the natural and human environment from the proposed HEP action and alternatives on existing WRAMC and surrounding resources.

The Proposed Action involves the necessary erection of a permanent Hospital Energy Plant (HEP) structure to house six-1625 KW generators to provide Emergency Power Supply & Systems (EPSS) to support Walter Reed Army Medical Center during loss of main power from outside contracted energy plants. The HEP will replace the currently employed Interim EPSS that is not in full compliance with Military Handbook 1191 and Anti-Terrorism/Force Protection regulations. Based on the environmental impact analysis in the EA, which was incorporated into a Finding of No Significant Impact (FNSI), it has been determined that implementing the Army's proposed action will not have significant individual or cumulative impacts on the quality of the natural or human environment. Therefore, an Environmental Impact Statement is not required and will not be prepared.

The EA is available for public review at the Tacoma Park Library (5th and Cedar Streets NW, Washington D.C.) and at the WRAMC Garrison Environmental Office (Building 11, Room 2-08, Main Section). Interested parties are invited to submit written comments for consideration on or before 15 days after publication of this Notice of Availability to Mr. Charles Flippo, Garrison Environmental Office (GEO), Walter Reed Army Medical Center, ATTN: MCWR-GEO, 6900 Georgia Avenue, NW Washington, D.C., 20307-5001.

# FINDING OF NO SIGNIFICANT IMPACT

## Environmental Assessment Hospital Energy Plant Walter Reed Army Medical Center

**1.0 Description of the Proposed Action:** The Department of the Army proposes to construct a new, permanent, above grade, secure facility to house six (6) emergency generators, electrical switchgear, transformers, breakers and a motor control center to meet critical electrical and emergency power supply systems required for patient care. This facility will be known as the Hospital Energy Plant (HEP). Six-1625KW diesel generators and paralleling switchgear presently located in the temporary, Interim Generators site will be moved into this permanent facility. The Interim Generator Site will be dismantled upon completion of the HEP. The Interim Generator Site will be returned as close as possible to its original pre-construction site condition.

**2.0 Description of Alternatives:** The Proposed Action described above and the No-Action alternatives were considered in detail in this Environmental Assessment (EA). Other alternatives, which were initially considered and eliminated, include: (1) Replace original Emergency Power Supply and Systems (EPSS) with New EPSS in original location (2) Lease EPSS Rental Units and cabling (3) Locate new EPSS components in Grassy Area, South of Building 2. These three alternatives were removed from detailed consideration in this EA early in the evaluation process because they proved non-constructible, too costly, or would create impediments to the WRAMC mission.

**3.0 Anticipated Environmental Impacts:** The proposed action is not expected to have significant adverse effects on the natural or human environment on WRAMC's main installation. Impacts to natural resources are expected to be minor, primarily associated with the short-term effects of construction equipment and personnel on the south side of the main hospital building. Cultural consultation is ongoing with the District of Columbia State Historic Preservation Office (DC SHPO) for the proposed HEP construction and removal of the Interim EPSS sites. Implementation of the Proposed Action will not begin until all cultural resource coordination is complete. Impacts to socioeconomic conditions are expected to be minor and associated with the temporary construction activity and its marginal effects on the economy of the surrounding area. The Proposed Action is not expected to result in a change in the overall mission of WRAMC or to lead to an increase, decrease, or change in the number or types of tenants on the installation. The construction contractor would be responsible for ensuring that his construction activity would comply with all applicable federal and state environmental laws and regulations.

**4.0 Findings:** On the basis of the environmental impact analysis found in the EA, which is hereby incorporated into this Finding of No Significant Impact (FNSI), it has been determined that implementing the Army's proposed action of constructing the HEP is not expected to have a significant individual or cumulative impact on the quality of the natural or human environment. Because no significant environmental impacts would be expected to result from implementing the proposed action, an Environmental Impact Statement is not required and will not be prepared.

**5.0 Public Comment:** The Army will not initiate the proposed the proposed action for 15 days following the publication of a Notice of Availability for the completed EA and FNSI in local newspapers. Individuals who want to review the EA may obtain a copy and provide comments during this 15-day period by writing to Mr. James Stueve, Public Affairs Officer, Walter Reed Army Medical Center, ATTN: MCAT-PA, 6900 Georgia Avenue NW, Washington, D.C. 20307-5001. Copies of the EA will be available for public review at the Silver Spring Branch Library (8901 Colesville Road, Silver Spring, MD) and the WRAMC Public Affairs Office (Building 11, Main Section).

Date Signed: \_\_\_\_\_

\_\_\_\_\_  
Kevin C. Kiley  
Major General, Medical Corps  
Commanding

# **Environmental Assessment**

## ***Construction of Hospital Energy Plant, Main Section***

### **Walter Reed Army Medical Center**

March 31, 2004

**FINAL DRAFT**

Environmental Assessment for  
Walter Reed Army Medical Center  
Proposed Hospital Energy Plant

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Major General, Medical Corps  
Commanding

# Environmental Assessment

## Construction of Hospital Energy Plant, Main Section

### TABLE OF CONTENTS

<u>TOPIC</u>	<u>PAGE</u>
<b>Executive Summary</b>	
Introduction	1
Background	1
Proposed Action	2
No Action Alternative	2
Alternatives Eliminated from Detailed Study	3
Regulatory Requirements	3
Environmental and Socioeconomic Consequences	5
Conclusion	5
<b>SECTION 1.0 Purpose, Need and Scope</b>	7
1.1 Introduction	8
1.2 Purpose and Need	8
1.3 Scope	10
1.4 Public Involvement	10
<b>SECTION 2.0 Proposed Action</b>	11
<b>SECTION 3.0 Alternatives</b>	12
3.1 Introduction	13
3.2 Alternatives Evaluated	13
3.2.1 Proposed Action	
3.2.2 No Action Alternative	
3.3 Alternatives Eliminated From Detailed Study	13
3.4 Public Review	13
<b>SECTION 4.0 Affected Environment</b>	14
4.1 Project Area Description	15

# Environmental Assessment

## Construction of Hospital Energy Plant, Main Section

### TABLE OF CONTENTS

<b><u>TOPIC</u></b>	<b><u>PAGE</u></b>
4.2 Land Use	15
4.3 Geology, Soils, and Topography	16
4.3.1 Geology	
4.3.2 Soils	
4.3.3 Topography and Drainage	
4.3.4 Wetlands	
4.4 Vegetation	16
4.5 Air Quality	17
4.6 Rare, Threatened, and Endangered Species	17
4.7 Cultural Resources	17
4.7.1 Archeological Resources	
4.7.2 Historic Resources	
4.8 Hazardous, Toxic, and Radioactive Substances	18
4.8.1 Contaminated Sites	
4.8.2 Hazardous Materials, Hazardous Substances, & Toxic Chemicals	
4.8.3 UST and AST	
4.8.4 PCBs	
4.8.5 Asbestos-Containing Materials (ACM)	
4.8.6 Lead and Lead-Based Paint (LBP)	
4.8.7 Radon	
4.9 Socioeconomic Conditions	20
4.9.1 Demographics	
4.9.2 Economics	
4.9.3 Noise	
4.9.4 Visual and Aesthetic Value	
4.10 Environmental Justice	21
<b>SECTION 5.0 Environmental Consequences</b>	<b>22</b>
5.1 Project Area	23

# Environmental Assessment

## Construction of Hospital Energy Plant, Main Section

### TABLE OF CONTENTS

<b><u>TOPIC</u></b>	<b><u>PAGE</u></b>
5.2 Land Use	23
5.3 Geology, Soils, and Topography	24
5.3.1 Geology	
5.3.2 Soils	
5.3.3 Topography and Drainage	
5.3.4 Wetlands	
5.4 Vegetation	25
5.5 Air Quality	25
5.6 Rare, Threatened, and Endangered Species	26
5.7 Cultural Resources	26
5.7.1 Archaeological Resources	
5.7.2 Historical Resources	
5.8 Hazardous, Toxic, and Radioactive Substances	27
5.8.1 Contaminated Sites	
5.8.2 Hazardous Materials, Hazardous Substances and Toxic Chemicals	
5.8.3 UST's	
5.8.4 Polychlorinated Biphenyls (PCB)	
5.8.5 Asbestos-Containing Materials	
5.8.6 Lead and Lead-Based Paints	
5.8.7 Radon	
5.8.8 Generator Engine Exhaust	
5.9 Socioeconomic Conditions	30
5.9.1 Demographics	
5.9.2 Economics	
5.9.3 Noise	
5.9.4 Visual and Aesthetic Values	
5.10 Environmental Justice	32

# Environmental Assessment

## Construction of Hospital Energy Plant, Main Section

### TABLE OF CONTENTS

<b><u>TOPIC</u></b>	<b><u>PAGE</u></b>
5.11 Environmental Permits and Compliance	32
5.12 Cumulative Impacts	32
5.13 Irreversible and Irretrievable Commitment of Resources	33
<b>SECTION 6.0 Conclusion</b>	<b>34</b>
<b>SECTION 7.0 References</b>	<b>35</b>
Appendix A Summary of Conference – HSMM Architects	38
Appendix B Agency Coordination	39
Appendix C Alternatives Eliminated From Further Consideration	40
Appendix D Rare and Threatened Species	41
Appendix E Existing Land Use Allocations – WRAMC Main Section	45
Appendix F Net Increase in Emissions	46
Appendix G Air Quality Conformity Review	48
Appendix H Wind Rose Data for Washington, DC	49
Appendix I Noise Data	51
Acronyms and Abbreviations	53

# Executive Summary

## Introduction

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, the Department of the Army has prepared this Environmental Assessment (EA) to address the potential environmental and socioeconomic impacts of a proposed Federal action as described below.

This assessment follows policy, procedures, and responsibilities for assessing the environmental effects of Army actions. It implements the Council on Environmental Quality's National Environmental Policy Act regulations, Executive Order 12114, Department of Defense (DoD) Directive 6050.1, and DoD Directive 6050.7. Title: Environmental Effects of Army Actions; Authors: Army Publications and Printing Command; Document Number: AR 200-2

This Environmental Assessment (EA) concerns the proposed options for: The Proposed Action (PA) entails building a 13,241 square foot Hospital Energy Plant in the grassy area on the south side of Building 2, and north of the sidewalk which runs east and west, to house all emergency power system components, network transformers, network protectors, distribution switchgear, motor control center. The cost is estimated to be \$9.3 million. This equipment is needed for compliance with codes and standards regarding emergency power and clinical apparatus necessary for the maintenance of human life in an acute care hospital facility.

## Background

Walter Reed Army Medical Center (WRAMC) is the Army's largest health care facility and one of the largest in the DoD. More than a million patients per year visit the hospital at WRAMC's Main Section and its two satellite clinics. WRAMC is home to the North Atlantic Regional Medical Command (NARMC), one of US Army Medical Command's (MEDCOM) five U.S. regional commands. NARMC comprises 21 states and the District of Columbia, providing leadership, planning, and support for the 50 Army hospitals and clinics in the region.

In response to the failure of the Emergency Power Supplies (EPS, or generators) in August 2001, which resulted in the partial evacuation of the hospital (Bldg. 2) at WRAMC, six rental generators were obtained and wired into the existing distribution panels. Subsequently, these units have been temporarily replaced with 6 trailer mounted EPS's and electrical switch gear, in the parking lot adjacent to Building 92 as an interim measure until the new Hospital Energy Plant is built.

The generators that failed have been removed from the basement of the hospital. While the interim portable generators provide a stopgap measure so normal hospital operations can continue, the National Fire Protection Association (NFPA) and Military Handbook 1191 provide regulations governing “permanently located” generators for health care organizations that read as follows:

NFPA 99, Health Care Facilities, 2002 edition, states:

*4.4.1.1.4 Essential electrical systems shall have a minimum of two independent sources of power: a normal source generally supplying the entire electrical system and one or more alternate sources for use when the normal source is interrupted.*

*4.4.1.1.6 Where the normal source consists of generating units on the premises, the alternate source shall be either another generating set or an external utility service.*

MIL HNBK 1191

*10.3.1 Alternate Electrical Source. The alternate electrical source will conform to NFPA-70 and 99 except where Service Criteria listed in Table 10-1 have more applicable references stringent requirements.*

## Proposed Action

The Proposed Action (PA) entails building a new building that will house the entire Emergency Power Supply System (EPSS), necessary for patient care in Building 2. The new Energy Plant will house the 6 interim generators (after removing them from the trailers), fuel day-tanks and paralleling switchgear to replace temporary site located in the parking lot south of Building 2.

## No Action Alternative

Under the No Action Alternative (NAA), the trailer mounted EPS units would stay in place in the parking lot south of Building 2. While the trailer mounted units will provide emergency power for the required amount of time dictated by MIL HDBK 1191 for patient care and Force Protection, they are a temporary solution as the trailers do not provide the weather protection and security required for EPSS components provided by a permanent structure.

## Alternatives Eliminated from Detailed Study

Following the failure of the Emergency Power Supply in August 2001, rental generators were connected to the hospital to meet immediate patient care requirements. Four alternatives were studied to determine the approach for providing the permanent emergency power to the hospital in the June 2002 Environmental Assessment: Installation of Emergency Generators for Emergency Power to Building #2, Main Section. That EA addressed and eliminated the following alternatives:

1. Rebuilding or replacing the existing (original) eight EPS's located in the basement (existing units are vintage 1972) – This option was eliminated in favor of purchasing the trailer-mounted units in 2002, as described in the interim EA.
2. Locating a new Hospital Energy Plant south of Bldg. 2
3. Locating a new Hospital Energy Plant north of Bldg. 2
4. Preparing a site in the grassy area south of the hospital to locate facility owned trailer mounted units.

Rebuilding the generators (Option #1) was eliminated as the original equipment did not provide sufficient power to supply the hospital's electrical requirements. Option #3 was eliminated due to the environmental noise impact to the surrounding community and slope of the site. Option #4 was eliminated for the interim project in anticipation of constructing the Hospital Energy Plant, the subject of this EA, in that location.

For the purposes of this Environmental Assessment, Option #2 was selected as the site to build the Hospital Energy Plant to house all EPSS components.

## Regulatory Requirements

The EA has been prepared in accordance with the NEPA of 1969, the Council on Environmental Quality (CEQ) guidance in 40 CFR § 1500-1508, and Army Regulation (AR) 200-2. The Proposed Action would comply with all applicable regulations (See Table ES-1).

The NEPA is our basic national charter for protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy.

**Table ES-1**

**Compliance with Federal Environmental Statutes and Executive Orders**

<b>Acts</b>	<b>Compliance</b>
Clean Air Act, as amended (Public Law 88-206)	FULL
Clean Water Act, as amended (Public Law 95-217)	FULL
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986	FULL
Endangered Species Act of 1973, as amended (Public Law 93-205)	FULL
Farmland Protection Policy Act	N/A
Fish and Wildlife Coordination Act, as amended (16 United States Code [U.S.C.] 661, et seq.)	FULL
National Environmental Policy Act of 1969 (Public Law 91-190)	FULL
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	FULL
Noise Control Act of 1972, as amended	NA
Resource Conservation and Recovery Act (Public Law 94-580)	FULL
Safe Drinking Water Act, as amended (Public Law 93-523)	N/A
Solid Waste Disposal Act of 1965, as amended	N/A
Toxic Substances Control Act of 1976 (Public Law 94-469)	N/A
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. 1101, et seq.)	N/A
Wetlands Conservation Act (Public Law 101-233)	N/A
Wild and Scenic Rivers Act	N/A
Floodplain Management (Executive Order 11988)	N/A
Protection of Wetlands (Executive Order 11990)	N/A
Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898)	FULL

It contains "action-forcing" provisions to make sure that federal agencies act according to the letter and spirit of the Act.

AR 200-2 establishes policy, procedures, and responsibilities for assessing the environmental effects of Army actions. It implements the Council on Environmental Quality's National Environmental Policy Act regulations, Executive Order 12114, DoD Directive 6050.1, and DoD Directive 6050.7. This regulation applies to the Active Army, Army National Guard (ARNG), and the U.S. Army Reserve (USAR). It applies to proposals and activities of the ARNG involving Federal funding. It does not apply to the Civil Works functions of the Corps of Engineers nor to combat or combat-related activities in a combat zone.

The purpose of this EA is to determine whether an Environmental Impact Statement (EIS) should be completed that would state the effects of the PA on the environment, or to conclude a Finding of No Significant Impact (FNSI). A FNSI is a document that briefly states why an action will not significantly affect the environment, thus voiding the requirement for an EIS. The FNSI will include a summary of the conclusions of the EA and will note any environmental documents related to it.

## Environmental and Socioeconomic Consequences

Locating the Hospital Energy Plant and AST's south of Building 2 would have limited impacts during construction. The extent of the impacts would be to the tarmac, soils, and grass, which are located in the area of construction. The socioeconomic consequences of the PA are significant in that the new EPSS and other components housed in the new Hospital Energy Plant will provide an increased level of medical care and refuge in the event of a long term power outage. The cumulative effect of this PA upon the Main Section of WRAMC or surrounding areas is not expected to be significant, other than improving the ability of the hospital to provide quality care under adverse circumstances.

## Conclusion

Implementation of the PA is not expected to have significant adverse effects on environmental resources or socioeconomic conditions of WRAMC. Impacts to natural resources are expected to be very minor, if any. Long term and short-term effects are primarily associated with the temporary construction activities for the new Hospital Energy Plant, as well as effects upon soil and landscaping in the area of the new Plant. Historic structures would not be affected by the location of the new Hospital Energy Plant housing the EPSS and other patient critical components, other than those minor effects addressed in the DC SHPO letter, Re: Section 106 review of Building 2 physical plant; dated 11 February 2003.

The PA is not expected to result in a change in the overall mission of WRAMC, but would offer a direct, viable permanent solution to meet compliance standards of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). Table ES-2 summarizes the impacts of the PA and NAA on WRAMC resources.

**Table ES-2**

**Summary of Effects of the Proposed Action and the No Action Alternative**  
*(all Proposed Action items are short term)*

<b>Resource</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
Land Use	Minor Impacts	Minor Impacts
Geology	No Impacts	No Impacts
Soils	Minor Impacts	Minor Impacts
Topography and Drainage	No Impacts	No Impacts
Climate	No Impacts	No Impacts
Vegetation	Minor Impacts	No Impacts
Air Quality	Minor Negative Impacts	Minor Negative Impacts
Water Quality	No Impacts	No Impacts
Groundwater	No Impacts	No Impacts
Aquatic Resources and Wetlands	No Impacts	No Impacts
Wildlife Resources	No Impacts	No Impacts
Threatened and Endangered Species	No Impacts	No Impacts
Prime and Unique Farmlands	No Impacts	No Impacts
Wild and Scenic Rivers	No Impacts	No Impacts
Archaeological Resources	No Impacts	No Impacts
Historic Resources	Mitigated Impacts	Negative Impacts
Hazardous, Toxic and Radioactive Substances	Potential Minor Impacts	Potential Minor Impacts
Infrastructure	No impacts	No Impacts
Transportation	No Impacts	No Impacts
Demographics	No Impacts	No Impacts
Economics	Short-term Positive Impacts	No Impacts
Public Health and Safety	Positive Impacts	Positive Impacts
Noise	Minor Impacts	Minor Impacts
Visual and Aesthetic Values	Mitigated Impacts	Negative Impacts
Environmental Justice	No Impacts	No Impacts

## **SECTION 1.0 Purpose, Need and Scope**

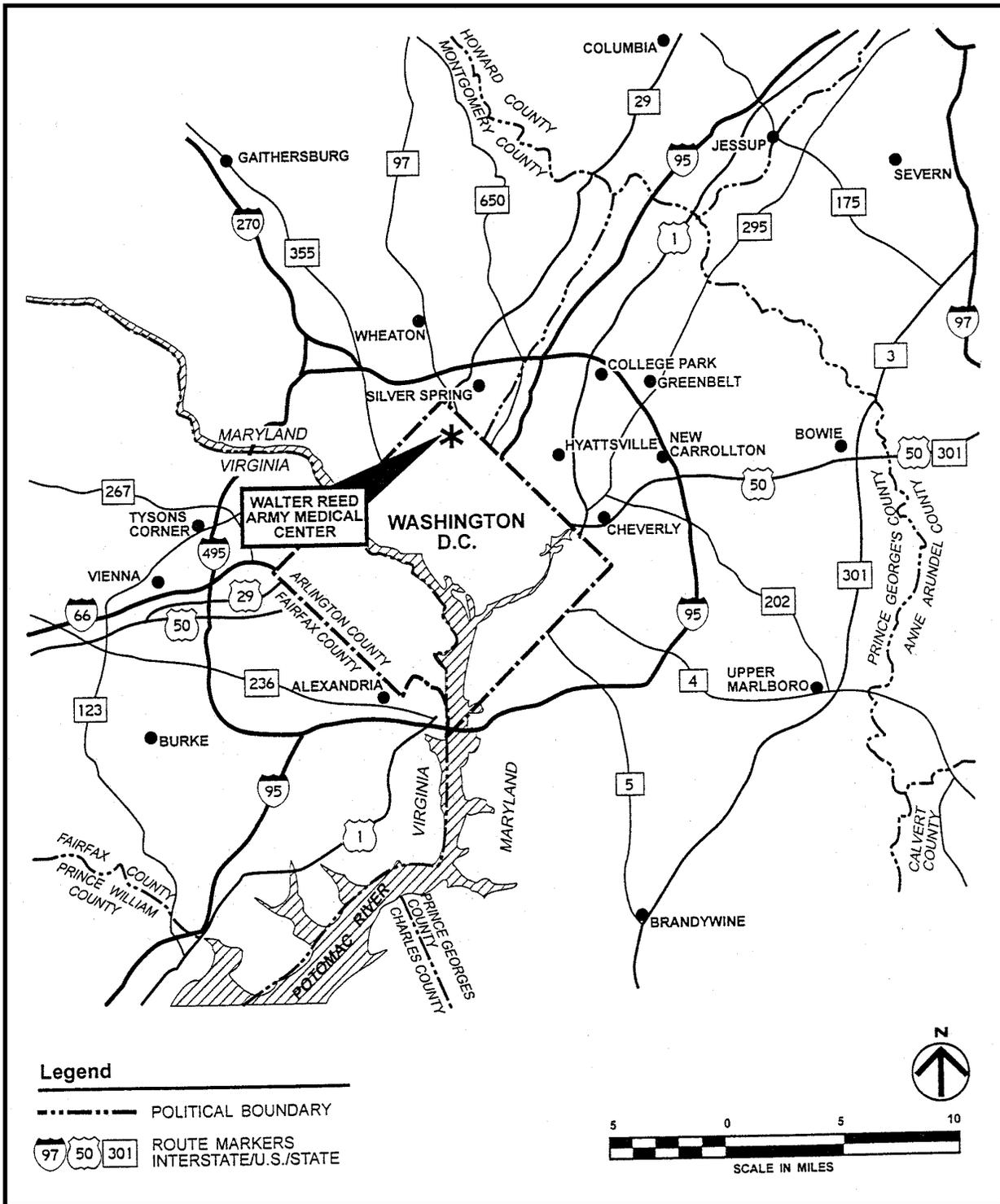
## **1.1 Introduction**

The Walter Reed Army Medical Center (WRAMC) is a major medical care, research and teaching center of international importance, under the command jurisdiction of the US Army Medical Command (MEDCOM), Fort Sam Houston, Texas. WRAMC is the Army's largest health care facility and one of the largest in the Department of Defense (DoD). More than a million patients per year visit the hospital at WRAMC's Main Section and its two satellite clinics. WRAMC is home to the North Atlantic Regional Medical Command (NARMC), one of US Army Medical Command's (MEDCOM) five U.S. regional commands. NARMC comprises 21 states and the District of Columbia, providing leadership, planning, and support for the 50 Army hospitals and clinics in the region.

WRAMC hosts approximately seventeen tenant organizations. The largest tenant is the Walter Reed Army Institute of Research (WRAIR), the largest military medical research laboratory within the DoD. Another major tenant at WRAMC is the Armed Forces Institute of Pathology (AFIP), a tri-service organization teaching pathology to hundreds of military and civilian physicians each year. WRAMC consists of three geographically separate areas. The Main Section, near the northern border of the District of Columbia, contains the hospital and major research and teaching facilities. (See Figure 1.)

## **1.2 Purpose and Need**

The purpose for the Proposed Action (PA) is to guarantee the hospital's compliance with Joint Commission on Accreditation of Healthcare Organizations (JCAHO), National Fire Protection Association (NFPA) and Army standards for the provision of an alternate power source in the event of a normal power source failure. The events of August 2001 that resulted in the partial evacuation of the hospital provided irrefutable evidence that the original Emergency Power Supply System (EPSS) was inadequate. The PA entails building a 13,241 square foot Hospital Energy Plant in the grassy area on the south side of Building 2, and north of the sidewalk which runs east and west, to house all EPSS components, network transformers, network protectors, distribution switchgear, motor control center (see Figure 2). The cost is estimated to be \$9.3 million.



**Figure 1  
Regional Site Map**

### **1.3 Scope**

This Environmental Assessment (EA) analyzes the potential direct impacts of the PA.

This EA analyzes the potential environmental and socioeconomic effects that are associated with the PA and alternatives. The PA is presented in Section 2.0 and the alternatives are presented in Section 3.0.

### **1.4 Public Involvement**

A Public Notice and formal agency coordination letters will be submitted to Federal, state, regional, and local agencies and personnel, informing them of the PA and requesting written comments within 15 days. Copies of the public comments and WRAMC's responses will be presented in the final EA.

## **SECTION 2.0 Proposed Action**

The objective of the PA is to construct a new, permanent, above grade, secure facility to house six (6) emergency generators, electrical switchgear, transformers, breakers and a motor control center to meet critical electrical and emergency power supply systems required for patient care. This facility, located in a grassy area south of Building 2, will be known as the Hospital Energy Plant (HEP). Six-1625KW diesel generators and paralleling switchgear presently located in the temporary, Interim Generators site, will be moved into this permanent facility. The Interim Generator Site will be dismantled upon completion of the HEP. The Interim Generator Site will be returned as close as possible to it's original pre-construction site condition.

The diesel engine exhaust will be piped from the mufflers through a lined, insulated duct placed inside an existing 48" underground concrete pipe located between Building 1 and Building 2. The duct will be connected to an existing concrete fan pit containing new vertical up-blast, strobic fans. The pit and fans will be located to the southwest of the loading docks serving Building 2 and will be obscured with a screen wall integrating visual, acoustical, and airside performance, and maintenance considerations.

The generator and transformer room ventilation air will also be ducted below grade to the same duct described above. Back draft dampers will be located in the ductwork to prevent any diesel exhaust fumes from entering the facility during times of system backpressure at diesel engine start-up. Sound attenuation material will be required on the generator radiator exhausts, intake louvers in the generator and transformer rooms, and at the enclosures surrounding the up-blast generator exhaust fans. The generators will be fueled through an existing underground storage tank.

A map depicting the location of the Proposed Action and the No Action Alternative has been removed for security reasons. In the event exact locations are required, contact the Garrison Environmental Office at (202) 782-3880 or (202) 782-0089.

## **SECTION 3.0 Alternatives**

### **3.1 Introduction**

This section describes 2 alternatives that were considered for the location of a correctly sized EPSS that would produce the power necessary to satisfy all Essential Electrical Distribution System loads in the hospital as defined by NFPA 99, *Health Care Facilities*. In accordance with National Environmental Protection Act (NEPA) regulations, as amended, consideration and evaluation of reasonable alternatives were developed to meet objectives of the PA, while minimizing or avoiding environmental impacts. The alternative of No Action must meet “purpose and need” objectives to be considered a reasonable alternative. In addition to the No Action Alternative (NAA) only the PA is evaluated in detail and provides the basis for evaluating environmental impacts in Section 5, “Environmental and Socioeconomic Consequences”.

### **3.2 Alternatives Evaluated**

**3.2.1** Proposed Action  
See 2.0 – Proposed Action

**3.2.2** No Action Alternative

The NAA would leave the six interim generators, fuel tanks and switchgear in their existing location in the parking lot of the southeast corner of hospital, Building 2, Figure 3.

While the interim generators, fuel systems and associated equipment will produce the power for the Essential Electric Distribution System, it is not located in the most favorable environment and would cause long-term equipment maintenance and testing protocol problems. Additionally, force protection is of concern, as protection provided by a fence cannot provide heightened security in the event of a long-term outage or for an extended period of time.

### **3.3 Alternatives Eliminated From Detailed Study**

This EA eliminates from consideration the four alternatives that were eliminated as temporary sites in the June 2002 Interim Generator EA for the *permanent* generator requirement (see Appendix C).

Another possible alternative, to locate the Hospital Energy Plant (HEP) on the grassy knoll on the north side of Building 2, was eliminated from further consideration because of the excessive noise in such close proximity to Fern Street.

### **3.4 Public Review**

It is anticipated that the results of this EA will culminate in a Finding of No Significant Impact (FNSI) and will be published in *The Washington Post*, initiating a 15-day public review period. Any comments received during this period will be addressed and incorporated as appropriate. During the preparation of this EA, it was determined that significant, immitigable, or adverse impacts would not occur as a result of the PA, therefore, a Notice of Intent to prepare an Environmental Impact Statement (EIS) will not be published.

## **SECTION 4.0 Affected Environment**

This section describes the affected environment and the existing conditions of the natural and socioeconomic resources at WRAMC, Main Section. The specific area addressed in this EA is Building 2 and the surrounding Main Section area of WRAMC within the District of Columbia. These descriptions serve as the baseline against which the potential effects of the Proposed Action and alternatives are evaluated. The primary source of existing conditions environmental data for Section 4 is documentation at WRAMC, Main Section, including recent reports such as *Draft Environmental Assessment, Armed Forces Institute of Pathology*, Woolpert LLP, November 2000. Other sources of information were obtained from WRAMC staff. Agency coordination is addressed in Appendix B. Four site visits were made to the WRAMC facility between September 9, 2001 and May 8, 2002.

The following categories of existing conditions information were not found to be applicable to this proposed action and therefore were not evaluated further as part of the affected environment section: climate, water resources, aquatic resources, wildlife resources, prime and unique farmlands, wild and scenic rivers, schools, libraries, and recreation facilities, public health and safety, and transportation. The remaining portions of this section discuss the environmental condition of the Main Section of WRAMC.

#### **4.1 Project Area Description**

This section describes the existing conditions of the natural and socioeconomic resources at the Main Section. WRAMC consists of three geographically separated sections, located in northwest Washington, D.C. The Main Section, which this action concerns, is located in a residential area within the District of Columbia between Rock Creek Park and Georgia Avenue near the Maryland boundary.

The Main Section is bordered on the west by Rock Creek Park. Established Washington communities of Shepherd Park, Takoma Park, and Brightwood, surround the installation on the other three sides. These communities consist primarily of older, single-family housing units and some multi-family housing.

#### **4.2 Land Use**

Building 2, the hospital, is located on the 113 acre Main Section area of WRAMC in the northeast quadrant of the installation. The Main Section Area includes the Building 2, other patient care activities, community facilities, research facilities, and various administrative facilities.

## **4.3 Geology, Soils, and Topography**

### **4.3.1 Geology**

WRAMC is located along the eastern edge of the Piedmont Plateau physiographic province of the Appalachian Highlands. The underlying bedrock consists of massive crystalline metamorphic schist and gneiss of the Pre-Cambrian Age. Igneous rocks, pegmatites, and veins of quartz are intermingled in the metamorphic rock. The facilities are not located over an aquifer recharge area nor are they located in an area of karst terrain.

### **4.3.2 Soils**

The soils of WRAMC are completely urbanized. The soils of the Main Section include eleven soil types representing eight soil series. Aside from a small area of Manor loam in the extreme southwest corner of the WRAMC, Main Section, all of the soils are highly disturbed urban land complexes. All soils are well drained and have moderate permeability. Frost action potential is low to moderate throughout the installation's soils, and erosion potential is generally moderate, except for areas of 15 to 40 percent slopes south of 15th Street, south and west of the Mologne House and surrounding the formal garden/bandstand facility where the erosion potential is high.

### **4.3.3 Topography and Drainage**

WRAMC Main Section is entirely within the drainage basin of Rock Creek, which originates within Montgomery County, Maryland, and flows south through Washington, D.C., into the Potomac River. Elevations on the Main Section vary from 244 feet above mean sea level (MSL) south of Abrams Hall, to 352 feet above MSL near 14th Street and Alaska Avenue. Surface drainage on Main Section is generally to the south with the majority of storm water entering the Luzon tunnel near the intersection of Aspen Street and Luzon Avenue before flowing into Rock Creek.

### **4.3.4 Wetlands**

There are no known jurisdictional wetlands within the vicinity of Building 2, nor the Main Section.

## **4.4 Vegetation**

Vegetation surrounding Building 2 consists of grass, 20-30' trees (though none are located in the area of the PA), and small shrubbery.

## **4.5 Air Quality**

The Metropolitan Washington Air Quality Committee was created in 1992 to coordinate regional efforts at reducing air pollution. Air contaminants monitored throughout the District of Columbia and the surrounding metropolitan region include ground-level ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead. The EPA has established National Ambient Air Quality Standards (NAAQS) for each of these six pollutants pursuant to Sections 109 and 301(a) of the Clean Air Act. Areas that do not meet the NAAQS are considered severe non-attainment areas for the particular pollutant. The District of Columbia is classified as a serious non-attainment area for ozone and a moderate maintenance area for carbon monoxide, primarily as a result of emissions generated by automobile traffic. WRAMC operates four boilers and other stationary emission sources under a Final Title V Operating Permit (Permit #004) that was issued in July 2000. The boilers use natural gas fuel with diesel fuel for contingency use (Woolpert, 2000b).

## **4.6 Rare, Threatened, and Endangered Species**

Except for transient individuals, no proposed or Federally listed endangered or threatened species are known to exist in the project impact areas. Therefore, no Biological assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. See Appendix D.

## **4.7 Cultural Resources**

### **4.7.1 Archeological Resources**

Construction and land management activities during WRAMC's long history have extensively disturbed the grounds of the Main Section. A reconnaissance survey and literature search was conducted as part of a Section 106 report, prepared in 1993 to address the implementation of the Installation Master Plan. This research revealed no archeological resources within the Main Section boundaries. Due to extensive land disturbance, the report concluded that there is little probability that significant archeological resources would be found on the installation.

#### **4.7.2 Historic Resources**

A large portion of the Main Section contains significant historic resources. Historic resources located within the boundaries of the Main Section include a historic district eligible for listing on the National Register, and a National Historic Landmark. The National Register-eligible historic district incorporated most of the installation with the exception of the area north of Dahlia Street and east of 14th Street. Building 1, and specifically D Wing, have been determined to be included in the area of potential effect (APE) for this action. Building 1 has been determined to be a major contributing element to the National Register Eligible Historic District, while Building 2 is located outside its boundary.

### **4.8 Hazardous, Toxic, and Radioactive Substances**

All hazardous material handling and disposal is regulated under the Federal Occupation Safety and Health Act, 29 Code of Federal Regulations (CFR) 1910.1200 and 1910.1320 or U.S. Environmental Protection Agency 40 CFR, which specify how hazardous wastes must be managed, tracked, transported, and disposed. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governs the clean up of contaminated sites at private and Federal sites.

#### **4.8.1 Contaminated Sites**

There are known to be Polychlorinated Biphenyls (PCB's) in the soil and groundwater at a site north of the Rumbaugh Garage within the Main Section. This site is currently being addressed under the Defense Environmental Restoration Act (DERA) Program that is responsible for cleaning up contamination that has resulted from past practices at Army (and other DoD) installations. The CERCLA of 1980, and the Superfund Amendments and Reauthorization Act (SARA) of 1986, gave DoD the authority for certain cleanup activities at former DoD sites in the United States and its territories. WRAMC continues to investigate this site. There are no known contaminated, or CERCLA sites existing at or near the Building 2 site. (EPA Website, May 2001).

#### **4.8.2 Hazardous Materials, Hazardous Substances, & Toxic Chemicals**

Clinical laboratories, patient care activities, facilities maintenance, and housekeeping are all functions occurring within Building 2 that use hazardous or toxic materials. The hazardous material spill response unit is currently located at WRAMC Main Section fire station. WRAMC currently uses the Hazardous Substance Management System (HSMS) as a tool for tracking all hazardous materials used on the installation.

#### **4.8.3 UST and AST**

There are multiple storage tanks, both underground and above ground on Main Post. The total gallons of fuel stored are approximately 900,000 gallons. Both the PA and the NAA will be connected to a 20,000 diesel UST located at the southwest corner of Building 2.

#### **4.8.4 PCBs**

A PCB total removal program has been implemented at all WRAMC sites. Out-of-service transformers were drained at the service site and the fluid disposed of by a licensed hazardous waste disposal contractor. All PCB's have been removed from WRAMC's transformers. Old light ballasts still being used at WRAMC contain PCB's. These ballasts are removed and replaced with non-PCB containing ballasts as light fixtures are replaced. PCB ballasts are collected and disposed of through the Defense Reutilization and Marketing Office (DRMO).

#### **4.8.5 Asbestos-Containing Materials (ACM)**

ACM is present at WRAMC Main Section, including utility spaces in Building 2. ACM within those portions of the existing building that would be affected by the proposed project has been removed. The final report on the removal of the asbestos containing material can be viewed at the Garrison Environmental Office, Building 11, Walter Reed Army Medical Center.

#### **4.8.6 Lead and Lead-Based Paint (LBP)**

LBP is present at WRAMC Main Section; however, it is not likely to be present or to be impacted in the affected portions of Building 2 that will be affected by the proposed project.

#### **4.8.7 Radon**

Radon has been detected in the past at a limited number of locations on WRAMC Main Section, although subsequent monitoring has shown radon levels to be below EPA levels of concern at these locations. Radon has not been detected in the portion of Building 2 that will be affected by the proposed project. Reference: *Radon Monitoring Report For Six Buildings, Walter Reed Army Medical Center, Washington, DC, General Physics Corporation, dated September 2001.*

## **4.9 Socioeconomic Conditions**

### **4.9.1 Demographics**

The Main Section is located in Ward 4 in the District of Columbia, and in Census tract 18.01. The population of Ward 4 was 81,929 persons in 1980, and had declined to 78,425 persons in 1990, an annual rate of decline of 0.4 percent over the decade. The area around the Main Section contains Census tracts 18.01, 17.01, 18.04 and 16.0. Census data shows that the area around the Main Section has a much higher proportion of single-family detached housing units; more persons per household; and higher median age, household income, and housing value than the District of Columbia as a whole.

### **4.9.2 Economics**

The Walter Reed Health Care System includes WRAMC and its tenants at the Main Section, Forest Glen Annex, as well as satellite clinics at Fort McNair, the Pentagon, Fort Meade, and elsewhere in the metropolitan area. This system provided approximately 7,300 jobs in the regional economy in FY 1998, about half of which are civilian jobs. WRAMC contributes an estimated \$257.8 million annually to the regional economy of the Washington metropolitan area, which includes expenditures for supplies, services, utilities, base operations, and a payroll of approximately \$104 million.

### **4.9.3 Noise**

There are no activities at WRAMC Main Section that produce significant levels of noise. Periodic medical helicopter landings at the Main Section generate a short-term increase in noise levels, but ambient noise is primarily generated by traffic volume surrounding the installation.

There are several emergency power systems (EPS) at WRAMC expected to provide emergency power two to three times a year. Maintenance personnel maintain the generators with weekly inspections and monthly tests. This maintenance includes checking oil and running the generator for thirty minutes each month.

### **4.9.4 Visual and Aesthetic Value**

Visual resources comprise the natural and artificial features that give a particular environment its aesthetic quantities. Aesthetics are defined as the visibility and appearance of the physical environment, which may be of concern to the public under certain conditions. These features form the overall impression that a viewer receives of an area, or its landscape character.

WRAMC, Main Section has a historic district which has been determined eligible for the National Register in a 1994 Section 106 Report by KFS as well as a 1999 Integrated Cultural Resources Management Plan (ICRMP) by

Goodwin and Associates. Within the district, thirty-three (33) buildings are identified as contributing resources. Other aesthetic considerations associated with the northwestern portion of WRAMC Main Section include the proximity of established single-family residential neighborhoods to the northwest and north, as well as Rock Creek Park to the west. There is also a wooded buffer to the west along 16<sup>th</sup> Street. The WRAMC has developed an Installation Design Guide to direct development and additions to the built environment in a sensitive manner that achieves visual compatibility.

Building 1, part of the Historic District, will be adjacent to the PA on the south side.

An existing land use table can be found at Appendix E.

#### **4.10 Environmental Justice**

Executive Order 12898, issued February 11, 1994, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations." The E.O. requires Federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, or activities on minority and low-income populations. Government, high-income and middle-income residential properties characterize the area surrounding WRAMC. The poverty rate in and around WRAMC ranges from 3 to 10 percent, which is below the 20 percent used to define a "poverty area."

## **SECTION 5.0 Environmental Consequences**

This section addresses foreseeable impacts of implementation of the Proposed Action, which entails removing the new trailer mounted interim units in the parking lot southeast of Building 2, adjacent to Building 92. The impacts analyzed in this section include the natural and human environments at WRAMC, Main Section. The potential effects of the NAA are also analyzed in this section for comparison purposes.

Certain categories of Section 5 were excluded from analysis, as in Section 4, due to prior agency consultation, document review and site visits. Accordingly, these categories, because there are no such resources at or near WRAMC, were not considered applicable to this action and were not evaluated: climate, water resources, aquatic resources, wildlife resources, prime and unique farmlands, wild and scenic rivers, schools, libraries, and recreation facilities, public health and safety, and transportation.

## 5.1 Project Area

The project area is that area illustrated in Figures 2a and 2b

## 5.2 Land Use

### *PA*

Impacts to the property between the Buildings 1 and 2 would be the result of placing a structure where a grassy area now exists, but contained north of the existing sidewalk. We believe that as long as we incorporate the advice from the DC State Historical Preservation Office (SHPO) pertaining to not allowing the building limits to encroach past the sidewalk, as well as mitigating adverse effects through design of the new terrace, in the design, the visual effects would reasonably be mitigated through design of the new terrace over the generator structure.

Once the interim generators have been removed from the parking lot southeast of Building 2 and placed inside the HEP, the area vacated will be returned back to its original use as a parking lot.

### *NAA*

Implementation of the NAA would impact the parking on the installation, as the location of the Interim Generator Project would permanently eliminate 16 parking spaces. The installation is already severely short of parking for staff and visitors.

## 5.3 Geology, Soils, and Topography

### 5.3.1 Geology

Neither the PA nor the NAA would have an impact.

### 5.3.2 Soils

#### *PA*

Implementation of the PA is expected to have minor impacts on soils due to disturbances in the construction area (grassy area south of the hospital). Standard erosion control measures would be followed during construction and renovation activities to keep impacts minimal.

#### *NAA*

Implementation of the NAA would have no impact on soils in the proposed area, as no new ground disturbance would occur unless trenches were dug for fuel piping to the existing UST.

### 5.3.3 Topography and Drainage

#### *PA*

According to the Design Analysis (DA) completed by HSMM, Architects Engineers Planners, revised 8 September 2003, "the new energy plant structure, external stairs and sidewalks will increase the impervious area on the site by approximately 6,000 square feet. Water quality control will be provided within a new sand filter that will be designed in accordance with the District of Columbia storm water management criteria and sediment/erosion control. The increase in runoff due to the additional impervious area should have minimal impact on the site."

The report continues to state that erosion and sediment measures on site will be installed in accordance with the District of Columbia "Erosion and Sediment Control Handbook".

#### *NAA*

Implementation of the NAA would have no impacts on topography and drainage since the area is already impervious.

### 5.3.4 Wetlands

Neither the PA nor the NAA would have an impact (see Appendix D).

## **5.4 Vegetation**

*PA*

Construction activities associated with the implementation of the PA are expected to have very minor impacts on vegetation. The only vegetation that would be affected by the PA would be the grass in the project area which is not natural vegetation.

*NAA*

Implementation of the NAA would have no impacts on vegetation.

## **5.5 Air Quality**

Federal regulations stipulate that a Federal Agency located in an air quality non-attainment or maintenance area must make a determination that an action conforms with a State's Implementation Plan for achieving and maintaining compliance with the NAAQS before action is taken [(40 CFR 93.150(b))]. As WRAMC and the site of the PA is located within a non-attainment area and because the PA will result in the emission of pollutants in an area classified as non-attainment, a Conformity Review has been performed (see Appendix F). The determination was that the requirements of the rule are not applicable.

*PA*

The PA is expected to have minor impacts on air quality (for more information, refer to Appendix F of this document). It is anticipated that each of the six 1,625 kW diesel generators will be exercised for 10 minutes per week for 40 weeks per year. In addition, each generator should be exercised under load for a period of 30 minutes per month for 12 exercise periods per year. Therefore, the six generators may be run for up to 760 minutes (13 hours) per year or 78 hours collectively. The amount of time the generators will be run in the event of a power outage is not predictable. WRAMC anticipates that air quality permits to operate the generators will need to be obtained from the DC Air Quality Division and that modifications to the installation's Title V permit may be required. The PA may have minor short-term impacts on the Indoor Air Quality (IAQ) of Building 2 due to exhaust gases entering the hospital's air intakes located on the south side or roof. This is discussed at 5.8.8.

*NAA*

Under the NAA, WRAMC would leave the six 1,625 kW interim diesel generators in the parking lot southeast of Building 2. The NAA poses minimal risk of affecting IAQ in Building 2, though Building 1 IAQ will be affected due to the proximity of the site to various air handler unit intakes. WRAMC possesses air quality permits from the DC Air Quality Division for operation of the generators on this site; modification of its Title V permit permitting permanent location might be required. WRAMC would coordinate and resolve all air quality permitting issues with the Air Quality Division if the NAA was chosen.

## **5.6 Rare, Threatened, and Endangered Species**

## *PA and NAA*

Based on a review of available information, site visits, and agency coordination, it was concluded that no rare, threatened and endangered species exist in the project area except for transient individuals. See Appendix D.

## **5.7 Cultural Resources**

### **5.7.1 Archaeological Resources**

Implementation of PA or NAA would result in no impacts to archaeological resources surrounding Building 2, or in the Main Section Area. Previous field investigations have concluded that there is low probability for significant archaeological sites.

### **5.7.2 Historical Resources**

#### *PA*

While Building 2 is not considered to contribute to the character of the National Register eligible historic district at WRAMC, Main Section, the adjacent Building 1 does. It is the visual effect and encroachment of the new structure on Building 1 with which [the DC SHPO has] been concerned as potentially causing an adverse effect. Building 1, however, is part of the Historical District. In a letter to Harjinder Singh, DPW, dated 11 February 2003, Tim Dennee, Architectural Historian, DC SHPO stated that "we are convinced that the avoidance of adverse effects would be very difficult in this case and are satisfied that the visual effects have been reasonably mitigated through the design of the new "terrace of the Interim EPSS generators adjacent to Building 1" over the generator structure [Hospital Energy Plant]. The HEP terrace is to be constructed in such a way that future emplacement of vegetation and area beautification can be easily included or upgraded.

#### *NAA*

Implementation of the NAA will have a significant impact on the historical nature of Building 1 because the Interim EPSS generators would remain adjacent to Building 1. Additional Section 106 consultation would be required.

## **5.8 Hazardous, Toxic, and Radioactive Substances**

### **5.8.1 Contaminated Sites**

*PA*

Since there are no contaminated sites in proximity to the PA, it is not expected that construction activities would have impacts. There is no record of hazardous, toxic or radioactive substances being used or stored in the project area. Hazardous substances related to equipment maintenance have been stored in the project area, within the basement of Building 2.

*NAA*

The NAA would not impact contaminated sites at WRAMC, as no new activities would be implemented.

### **5.8.2 Hazardous Materials, Hazardous Substances and Toxic Chemicals**

*PA*

Small amounts of hazardous materials (lubricants, solvents, and diesel fuel) are required to maintain the equipment. The materials will be handled and stored inside the building resulting in less potential impact to the environment from any spills that might occur as containment and cleanup can be contained.

*NAA*

Leaving the generators in the parking lot requires transport of hazardous materials required for maintenance of the generators. The quantities used would be very small (less than a gallon annually) and therefore the potential impacts would be very minimal. Minor spills are possible, and could result in the release of these materials to the environment and potentially to storm drains. WRAMC has on-site spill response capability within the Post Fire and Emergency Services Division.

### **5.8.3 UST's**

*PA*

The connection to and monitoring of the fuel system supplying the Hospital Energy Plant will be in accordance with the WRAMC Spill Prevention, Control and Counter Measures Plan and Installation Spill Control Plan (SPCC).

*NAA*

The NAA would not impact the existing UST.

#### **5.8.4 Polychlorinated Biphenyls (PCB)**

Neither the PA nor the NAA will require any new PCB items. Any existing PCB light ballast removed as part of construction or renovation activities would have to be disposed of in accordance with applicable waste management requirements.

#### **5.8.5 Asbestos-Containing Materials**

Neither the PA nor the NAA will require any new ACM, nor will they involve any construction or renovation activities that would impact existing ACM.

#### **5.8.6 Lead and Lead-Based Paints**

The PA may require the removal of existing paint that could be LBP. The lead contents of painted surfaces on which existing paint would be disturbed would have to be verified through testing and, if found to contain lead above regulatory levels, be removed in accordance with applicable DC and WRAMC LBP removal requirements.

HSMM specifications for the PA require that "coatings having a lead content over 0.06 percent by weight of nonvolatile content" will not be used.

#### **5.8.7 Radon**

Neither the PA nor NAA would be expected to increase radon levels, as no new openings to the subsurface will be created that could serve as entry points for radon. WRAMC policy requires that the newly constructed area be monitored for radon and, if radon is detected above EPA action levels, that mitigation be undertaken, if necessary, in accordance with DA Pamphlet 200-1.

### **5.8.8 Generator Engine Exhaust**

*PA*

Exhaust from generator engines located on campus can enter any structure under certain weather and wind conditions. The goal of a good design is to prevent the exhaust from entering the building under normal, and most abnormal, conditions. Generator exhaust can have a negative affect on the IAQ of nearby buildings. The Design Analysis (DA) completed by HSMM states that the best alternative (Option 1) for exhausting the generators is to utilize parts of the exhaust system used by the original generators installed in 1972; and, to add special purpose exhaust fans to the outlets on the southwest corner of Building 2. The net effect would be for the exhaust to be driven upward for a distance of 65' (assuming a 10 mph wind) before diffusing. This should, under average wind conditions, vent the exhaust away from the HVAC intakes of Building 2. This is based on the wind roses in Appendix H, which is, limited information pertaining to a particular time of year. The architect will complete an in-depth analysis in conjunction with the design of the building during the design process.

Another alternative (Option 2) would be to route the exhaust into an existing chimney on the north site of Building 1. The chimney is currently not in use, and would require significant enlargement to it and the north façade of the building to accommodate the piping and interior fans required for exhausting the generators. Using the chimney would provide a more elevated exit than Option 1, but the vertical up-blast fans would have to be placed on top of the existing chimney in a highly visible location that would not comply with Section 5.7 of the Installation Design Guide and would impact the historical appearance of Building 1. The location of the chimney would reduce the opportunity for generator exhaust to enter the air intakes of Building 2, but the exhaust would then be potentially entrained into Building 1.

Option 1 would be more desirable for the PA especially if additional "exhaust height" could be obtained. Alternatively the air intakes for Building 2 could be moved to a more isolated location.

*NAA*

The exhaust from the Interim Generator location has significant potential of entering surrounding buildings as the exhaust is emitted directly above the generators. There is no capability to add fans to "push" the exhaust higher into the atmosphere.

## **5.9 Socioeconomic Conditions**

### **5.9.1 Demographics**

*PA*

Implementation of PA would result in no permanent impact on regional demographics, as the work force needed for construction would come from the existing labor pool in the Metropolitan Washington area. However, there would be positive short-term economic impacts due to revenue the construction project would bring to the local economy. Completion of the PA is not expected to result in a net increase in employees within the Main Post.

*NAA*

The NAA would not increase or decrease regional employment levels or population other than what would be expected from regional projections.

### **5.9.2 Economics**

*PA*

Implementation of the PA would have minor positive impacts on economics during construction related to minor temporary increases in revenues for local businesses from the construction workforce.

*NAA*

The NAA would have no impacts on regional economics within the Main Section.

### **5.9.3 Noise**

*PA*

Because of the building materials and vibration isolators to be used in the construction of the building and mounting of the generators there will be little or no perceptible noise or vibration inside Building 1, 2 or outside the plant. The District of Columbia Municipal Regulations (DCMR), § 2801.2 prohibits noise from mechanical equipment in excess of 60 dBA at the property line. Neither the PA nor NAA would produce noise levels in excess of this restriction at either the Georgia Avenue or Fern Street boundaries. The distance from the PA, and NAA, to the Georgia Avenue and Fern Street boundaries is in excess of 650 feet and 900 feet respectively.

The PA is expected to have minor temporary impacts during construction and when the generators are used. Each generator will be exercised for 10 minutes per week for 40 weeks per year (just time enough for water temperature to stabilize if exercised without load). In addition, each set

should be exercised under load for a period of 30 minutes per month (between 20-40 days apart) for 12 exercise periods per year. This would total roughly 13 hours (760 minutes) per year per generator.

Power outages exceeding 1-3 seconds would trigger the generators to start depending on the setting of the Time Delay to Start relays. Once the generators have started they will run for 30 - 40 minutes and shut down. Unless there are abnormal external and internal outages, the sets should not run more than 25-30 hours per year.

Occupational Noise Hazards as defined by 29 CFR 1910.95(b)(2), Table G-16, will only be applicable for those technicians servicing the EPS's. Wearing the proper hearing gear defined by OSHA Personal Protection Equipment (PPE) standards will protect those technicians.

See Appendix I – Engine Emissions and Noise Data.

*NAA*

The NAA would increase noise levels temporarily whenever the generators are running, but the noise level does not exceed the 55 decibels for the night threshold at the installation perimeter nor does it increase existing noise levels in excess of local, district or OSHA (29 CFR 1910.95, Occupational Noise Exposure) guidelines.

#### **5.9.4 Visual and Aesthetic Values**

*PA*

There will be an impact on visual and aesthetic values to the area by the PA with placement of a building between two existing buildings, one historical and one abstractly modern. Due to the proximity to the historical Building 1, the architect intends to expand the influence of Building 1 in the PA. The planned, eventual physical connection between the two buildings with a terrace walkway as described in the DA will enhance the aesthetic value of the area.

*NAA*

The NAA will change the visual and aesthetic values of the WRAMC campus, as this distinctly modern utility form is contradictory to the historical district in which it is located.

### **5.10 Environmental Justice**

*PA*

Implementation of the PA would not disproportionately affect minority or low-income residents living in the immediate area.

NAA

The NAA would not impact minority or low-income residents, as no changes to the existing environment would occur.

### **5.11 Environmental Permits and Compliance**

Both the PA and the NAA will require new or modified air permits for compliance.

### **5.12 Cumulative Impacts**

Cumulative impact analysis considers the sum of the incremental effects of all past, present, and foreseeable actions on the environment, regardless of who undertakes the action. Cumulative effects can include impacts from the Proposed Actions, impacts from other known local actions, on- or off-site impacts, incremental effects over time from several related actions on a specific resource, and additive effects on multiple projects occurring simultaneously.

The PA is a significant undertaking to bring the Army's premier medical center into compliance with regulatory bodies to ensure the safe provision of patient care. The failure of the Emergency Power Supply in August 2001 caused a tremendous impact to the delivery of patient care taxing the regional medical systems when patients were evacuated to other medical treatment facilities. The overwhelming positive response demonstrated the community's support for the mission of this installation. Additionally, the faith and reliance that the patients, families, and staff traditionally place in the infrastructure of this institution was shaken to its very core. Quick response by many agencies crossing the Federal and civilian sector brought a temporary solution to enable resumption of patient care; however, the permanent fix has and will require considerable time and fiscal resources to make it a reality.

The constrained site on which Walter Reed Army Medical Center is situated creates many challenges to the design and construction of this PA. Many other construction projects are in progress or are planned to continually upgrade the facilities and services provided on this historic installation. Typically, such projects at Walter Reed may have cumulative impacts in areas such as traffic management, noise, air emissions, visual and aesthetic resources, and historic resources.

The HEP project would have localized impacts on noise, air emissions, visual and aesthetic resources, and historic resources, especially if the NAA were selected. The impacts of the proposed action would mitigate noise impacts to the environment, as well as impacts to aesthetic and historic resources. The cumulative impacts of air emissions would be addressed through the Walter Reed's Title V permit. This permit takes into account total emissions from the Post and their contribution to air quality in the Washington, DC

area. Cumulative impacts may be addressed through permit limitations on emergency generators.

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

The use of diesel fuel for powering the EPSs used in the PA, and the NAA, will be an irreversible commitment of resources.

## **6.0 Conclusion**

The NAA leaves the hospital at risk for complying with JCAHO's Environment of Care standard E.C. 2.10, Managing Security Risks. The provision of emergency power is absolutely critical to the care of patients in the event of interruption of commercial power. The NAA provides a relatively insecure fenced environment for the generators and they will remain exposed to the to the environment. Additionally, there is increased risk of hazardous materials spills into the storm water as well as exhaust exposure to surrounding buildings and pedestrians.

The PA recommending EPS components being securely located in the Hospital Energy Plant will ensure compliance with applicable regulatory codes and accreditation bodies for the provision of health care, and will provide the Force Protection mandated by Army regulations. There are no reasonably foreseeable significant adverse impacts associated with implementing the PA. It is recommended that a Finding of No Significant Impact (FNSI) be prepared.

## 7.0 References

- 1994 Main Section 106 Report, Walter Reed Army Medical Center, Washington, D.C.
- Army Regulation, (AR) 200-2
- *Draft Environmental Assessment, Armed Forces Institute of Pathology, Woolpert LLP, November 2000*
- *Environment of Care Manual, 2002 Edition, Sections 1.7 and 2.10.4, Joint Commission on Accreditation of Healthcare Organizations, Oakbrook, IL*
- Environmental Assessment of Building 83 Renovation, 2001
- National Environmental Policy Act (NEPA)
- NFPA 110, *Emergency and Standby Power Systems, 2002 Edition, National Fire Protection Association, Batterymarch, MA*
- NFPA 99, *Health Care Facilities, 2002 Edition, Electrical Section (Chapter 4), National Fire Protection Association, Batterymarch, MA*
- Occupational Safety and Health Standards (OSHA) 29 CFR 1910.147 - The Control of Hazardous Energy (lockout/tagout); and 29 CFR 1910.95, Occupational Noise Exposure
- Spill Prevention, Control and Counter Measures Plan and Installation Spill Control Plan (SPCC), prepared by the U.S. Army Corps of Engineers, October 2001.
- US Fish and Wildlife Service letter, Re: *Main Section WRAMC, between Rock Creek Park and Georgia Avenue, Washington, DC, January 16, 2002.* Prepared for Environmental Assessment – Renovation of Building 54, by US Army Corps of Engineers, Baltimore District, June 2002.
- US Military Handbook 1191, Military Medical and Dental Treatment Facilities, Section 10, Electrical Specification
- WRAMC 2002 Air Emission Certification Report, 12 April 2002
- WRAMC Title V Operating Permit #004, District of Columbia Environmental Health Administration Air Quality Division, 28 July 00
- DC SHPO letter, Re: Section 106 review of Building 2 physical plant; dated 11 February 2003
- Design Analysis completed by HSMM, Architects Engineers Planners, revised 8 September 2003.
- Curtis Engine Company and Elliot Power Systems letters and specs dated 04 February 2003.
- Elliot Power web site.  
[www.elliottpowersystems.com/product\\_pdf/rd\\_series/1625rd.pdf](http://www.elliottpowersystems.com/product_pdf/rd_series/1625rd.pdf)

### **Personal communications with the following individuals at WRAMC**

Flipppo, Charles, Chief, Garrison Environmental Office  
Marcus, Margie, WRAMC DPW Master Planning Branch  
Donald Parker, WRAMC DPW Master Planning Branch  
Lt. Col. Jane DeNio, Health Facilities Planning Office (HFPO)

### **Preparers**

Dan Chisholm, President, Motor and Generator Institute, PO 2474, Winter Park, FL 32790. 407-421-7189. Technical Committee member of NFPA 99, *Health Care Facilities* – Electrical Section; and NFPA 110, *Emergency and Standby Power System*

## Appendix A

### Summary of Conference – HSMM Architects

# Summary of Conference

**PROJECT:** WRAMC, Hospital Energy Plant

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**HSMM COMM. NO.:** 40033F

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**DATE:** 20 May 2003 10:05-  
10:35am

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**LOCATION:** National Capital Planning Commission  
401 9<sup>th</sup> St. NW, North Lobby, Suite 500

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**PRESENT:** Stephanie Sechris NCPC, staff representative for WRAMC submissions  
Gene Kellor NCPC  
Margorie Marcus WRAMC, DPW, MPB  
Don Parker WRAMC, DPW, MPB  
Peter Feibelman HSMM

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## SUMMARY:

1. I presented documents for the Energy Plant: Leo Daly drawings as introduction, and HSMM Options 1 & 4.
2. D. Parker relayed the opinion rendered earlier by the DC SHPO, Mr. Tim Dennee, on the Daly proposal. Mr. Dennee accepted the Daly proposal with the condition that all new development not encroach upon the lower landing north of Bldg. 1.
3. S. Sechris expressed delight in our ability to contain the program closer to the Hospital, thereby leaving greater green area at Bldg. 1. I indicated that the WRAMC Fire Chief intended to use this area as staging area for a ladder truck when the need arose.
4. G. Kellor expressed satisfaction with the South Elevation and asked about our proposed finish materials. I indicated our study had not begun, but that we would be referencing the façade from Bldg. 1 as a guide. G. cautioned that some reference was useful, but wholesale copying (my phrase) would be unfair to the dominance of the Hospital. G. also recommended our consideration of multiple Terrace levels as adding interest.

## Prepared by:

*HSMM*

Cc: Attendees  
Project Team

Peter Feibelman

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Appendix B

## Agency Coordination

No agencies were contacted specifically for purposes of preparing this EA.

Appendix D contains correspondence from the U.S. Fish and Wildlife Service concerning threatened or endangered species at Walter Reed Army Medical Center (WRAMC). Because of WRAMC's small size and its urban nature, the USFWS determination concerning such species is applicable to all projects at Main Post.

Coordination with the D.C. Air Quality Division concerning air emission impacts of the emergency generators took place through the permitting process. Implementation of the proposed action addressed in this EA would require additional coordination with the D.C. permitting authorities. A copy of WRAMC's Title V permit, and other permits pertaining to the Hospital emergency generators, are available from the Garrison Environmental Office, (202) 782-0089.

Appendix C  
 Alternatives Eliminated From Further Consideration

<b>Alternatives Eliminated from Further Consideration. Reference: Environmental Assessment on Interim Generators, June 2002</b>	
<b>Other Alternative Considered</b>	<b>Primary Reason for Elimination</b>
Repair Existing EPSs	<ul style="list-style-type: none"> <li>• Significant costs</li> <li>• Available kW is less than needed for Essential Electrical Distribution System loads</li> <li>• Environment not suitable for EPSS components</li> </ul>
Replace Existing EPSs with new EPSs in present EPSS room	<ul style="list-style-type: none"> <li>• Environment not suitable for EPSS components</li> <li>• Present Exhaust, Ventilation and Cooling System is not adequate for larger EPSs</li> </ul>
Continue to Lease EPSs and Cabling – leaving units in same locations	<ul style="list-style-type: none"> <li>• Force Protection not guaranteed because of lack of security fencing and cable protection</li> <li>• Fuel supply is not adequate to guarantee 4 days of fuel as required by MIL HNBK 1191</li> <li>• Exorbitant Costs</li> <li>• Exhaust gases will enter Air Supply intakes</li> <li>• Space at loading dock is hampering deliveries</li> </ul>
Locate new EPSS components in Grassy Area, South of Building 2	<ul style="list-style-type: none"> <li>• Exhaust gases will enter Air Supply intakes</li> <li>• If EPSSs are located in this area, the new Hospital Energy Plant cannot be built there.</li> </ul>

## Appendix D Rare and Threatened Species



United States Department of the Interior

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

September 15, 1997

Ms. Amy M. Guise  
U.S. Army Corps of Engineers,  
Baltimore District  
P.O. Box 1715  
Baltimore, MD 21203-1715

RE: Walter Reed Army Medical  
Center Environmental  
Assessments:  
Forest Glen and Glen Haven,  
Montgomery County, MD;  
Main Section, Washington DC

Dear Ms. Guise:

This responds to your September 15, 1997, request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened in the above referenced project areas. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

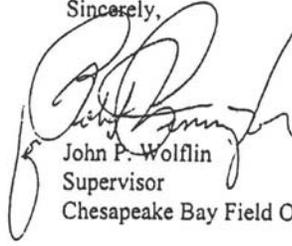
Except for occasional transient individuals, no proposed or Federally listed endangered or threatened species are known to exist in the project impact areas. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to Federally protected threatened or endangered species under our jurisdiction. For information on other rare species within the state of Maryland, you should contact Ms. Lori Byrne of the Maryland Heritage and Biodiversity Conservation Program at (410) 260-8570. For information on rare species within the District of Columbia, Karen Cieminski of the National Park Service should be contacted at (301) 427-1354.

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We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Ardy Moser at (410) 573-4537.

Sincerely,

A handwritten signature in black ink, appearing to read "John P. Wolflin". The signature is stylized and cursive, with a large initial "J" and "W".

John P. Wolflin  
Supervisor  
Chesapeake Bay Field Office



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401

October 30, 1997

Mr. David C. Dister  
Woolpert LLP  
409 East Monument Avenue  
Dayton, Ohio 45402-1261

RE: Environmental Review for  
Walter Reed Army Medical  
Center, Montgomery County,  
MD & the District of Columbia

Dear Mr. Dister:

This responds to your October 9, 1997, request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened in the above referenced project areas. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no proposed or Federally listed endangered or threatened species are known to exist in the project impact areas. Therefore, no Biological Assessment or further Section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

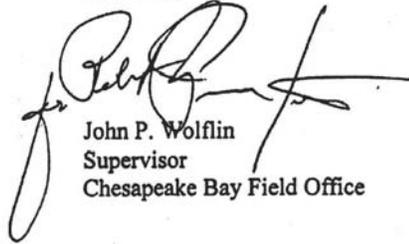
This response relates only to Federally protected threatened or endangered species under our jurisdiction. For information on other rare species within the state of Maryland, you should contact Ms. Lori Byrne of the Maryland Heritage and Biodiversity Conservation Program at (410) 260-8570. For information on rare species within the District of Columbia, Karen Cieminski of the National Park Service should be contacted at (301) 427-1354.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project

area should be identified, and if alterations of wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Andy Moser of the U.S. Fish and Wildlife Service's Chesapeake Bay Field Office at (410) 573-4537.

Sincerely,

A handwritten signature in black ink, appearing to read 'John P. Wolflin', with a long horizontal flourish extending to the right.

John P. Wolflin  
Supervisor  
Chesapeake Bay Field Office

## Appendix E

### Existing Land Use Allocations – WRAMC Main Section

<b>Appendix E</b>		
<b>Existing Land Use Allocations – WRAMC Main Section</b>		
<b>Category</b>	<b>Acreage</b>	<b>Percent of Total (%)</b>
Administration	19.46	17.0
Community Facilities	8.66	8.0
Family Housing (Officer)	9.13	8.0
Medical	24.15	22.0
Open Space	5.93	5.0
Recreation	12.98	11.0
Research and Development	12.54	11.0
Supply/Storage	1.45	1.0
Troop Housing (Enlisted)	4.13	4.0
Utilities	7.11	6.0
Primary Circulation	7.46	7.0
<b>TOTAL</b>	<b>113.00</b>	<b>100.00</b>

## Appendix F Net Increase in Emissions

### Walter Reed Army Medical Center - Replacement of Hospital Generators

**Replacement Generator Information:**

Make: Elliott MagneTek Power Systems  
 Model: Model 1625 RD  
       1625 kW Diesel Generator Set  
 Number of Generators: 6  
 kW: 1,625  
 Horsepower (generator): 2,179  
 Horsepower (engine): 2,346

**Manufacturer Supplied Emission Rates/Generator**

	g/HP-hr	lb/HP-hr	lb/hr	lb/gal <sup>(2)</sup>	lb/48-hrs <sup>(3)</sup>	tons/48-hrs	lb/275-hrs	tons/275-hrs
NOx	5.4	0.0119	19.34	0.1799	928.2	0.46	5,317.8	2.66
SOx <sup>(1)</sup>		0.00205	3.33	0.0310	159.9	0.08	916.1	0.46
CO	0.6	0.0013	2.11	0.0197	101.4	0.05	580.9	0.29
HC (VOC)	0.5	0.0011	1.79	0.0166	85.8	0.04	491.6	0.25
PM	0.19	0.0004	0.65	0.0060	31.2	0.02	178.8	0.09

<sup>(1)</sup> Manufacturer did not supply SOx emission information. AP-42, Table 3.3-1, 5th Edition was used to calculate SOx.

<sup>(2)</sup> lb/gal calculated by dividing the lb/hr by 107.5 gal/hr, max fuel use

<sup>(3)</sup> Annual maintenance is estimated to be 48 hours

**Total Anticipated Emissions for Six Generators**

	lb/hr	lb/48-hrs	tons/48-hrs	lb/275-hrs	tons/275-hrs
NOx	116.03	5,569.2	2.78	31,906.9	15.95
SOx <sup>(1)</sup>	19.99	959.4	0.48	5,496.6	2.75
CO	12.68	608.4	0.30	3,485.6	1.74
HC (VOC)	10.73	514.8	0.26	2,949.4	1.47
PM	3.90	187.2	0.09	1,072.5	0.54

<sup>(1)</sup> Manufacturer did not supply SOx emission information. AP-42, Table 3.3-1, 5th Edition was used to calculate SOx.

**Current Portable Temporary Generators**

Make: Sunbelt  
 Number of Generators: 6  
 kW: 1,500  
 Horsepower: 2,012

**AP-42 Emission Rates (Table 3.3-1, 5<sup>th</sup> Edition) - 2002 (Average hrs/generator)**

	lb/HP-hr	lb/hr	hrs	lbs.	tons
NOx	0.031	0.00	9.53	0.00	0.00
SOx	0.00205	0.00	9.53	0.00	0.00
CO	0.00668	0.00	9.53	0.00	0.00
VOC (TOC)	0.00247	0.00	9.53	0.00	0.00
PM	0.0022	0.00	9.53	0.00	0.00

**AP-42 Emission Rates (Table 3.3-1, 5<sup>th</sup> Edition) - 2002 (Total hrs/6 generators)**

	lb/HP-hr	lb/hr/gen	hrs	lbs.	tons
NOx	0.031	0.00	57.18	0.00	0.00
SOx	0.00205	0.00	57.18	0.00	0.00
CO	0.00668	0.00	57.18	0.00	0.00
VOC (TOC)	0.00247	0.00	57.18	0.00	0.00
PM	0.0022	0.00	57.18	0.00	0.00

**Summary:**

Estimated Potential Emissions Increase (6 generators)

(Net Emission Increase = Future Potential - Past Actual)

	NSR Significant Thresholds, tons	Past Actual (Sunbelts), tons	Future Potential 275-hour (MagneTek), tons	Net Emission Increase, tons
NOx	25	1.33	15.95	14.62
SOx	40	0.09	2.75	2.66
CO	100	0.29	1.74	1.45
VOC (TOC)	25	0.11	1.47	1.36
PM	15	0.09	0.54	0.45

*Net Emissions Increase (for potential emissions - 275-hour limit) is below the NOx NSR/PSD significant threshold level, therefore, the new generators will require a minor permit modification to the Title V permit.*

# Appendix G Air Quality Conformity Review

## GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project/Action Name: Installation of six 1,625-kW, trailer-mounted emergency generators

Project/Action Point of Contact: MAJ John M. Olson - 202-356-0038

Begin Date: July 2003

End Date: November 2003

No indirect emissions are associated with this project. The generators will be used for emergency power only for the hospital, Building 2.

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project/action because:

The project/action is an exempt action under 40 CFR 93.153(c) or (d),  
(SPECIFY APPLICABLE EXEMPTION CATEGORY AND REGULATORY CITATION)

OR

Total direct and indirect emission from this project have been estimated at a total of 23.03 tons per year (TPY) of nitrogen oxides (NO<sub>x</sub>), 2.13 TPY of volatile organic compounds (VOCs) and 2.52 TPY of carbon monoxide (CO). The net emission increase for the emergency generators are below the conformity threshold values established in 40 CFR 93.153(b) of 50 TPY of NO<sub>x</sub> and VOCs and 100 TPY of CO.

AND

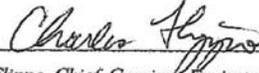
The project/action is not considered regionally significant under 40 CFR 93.153(i).

The total direct and indirect emissions do not equal or exceed the conformity thresholds and the emissions do not equal or exceed 10% or more of a non-attainment or maintenance area's total emissions for each pollutant of concern. The State Implementation Plan (SIP) for the District of Columbia (1990 Base Emission Inventory) shows the following emission totals: 68.432 tons per day (TPD) for VOCs, 70.729 TPD for NO<sub>x</sub> and 440.334 TPD for CO. Estimated actual emissions for the six generators are 23.03 TPY NO<sub>x</sub>, 2.13 TPY VOC and 2.52 TPY CO.

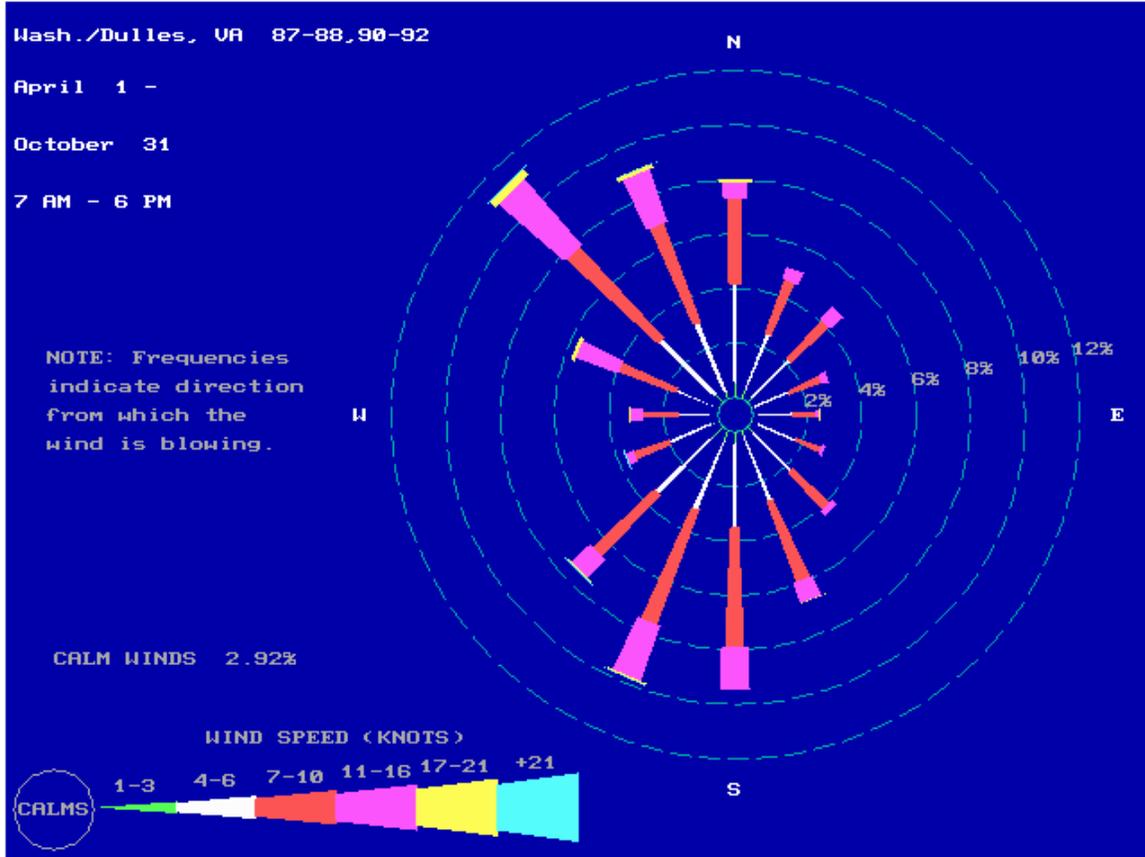
Supporting documentation and emissions estimates are

- ( X ) ATTACHED  
( ) APPEAR IN THE NEPA DOCUMENTATION (PROVIDE REFERENCE)  
( ) OTHER \_\_\_\_\_

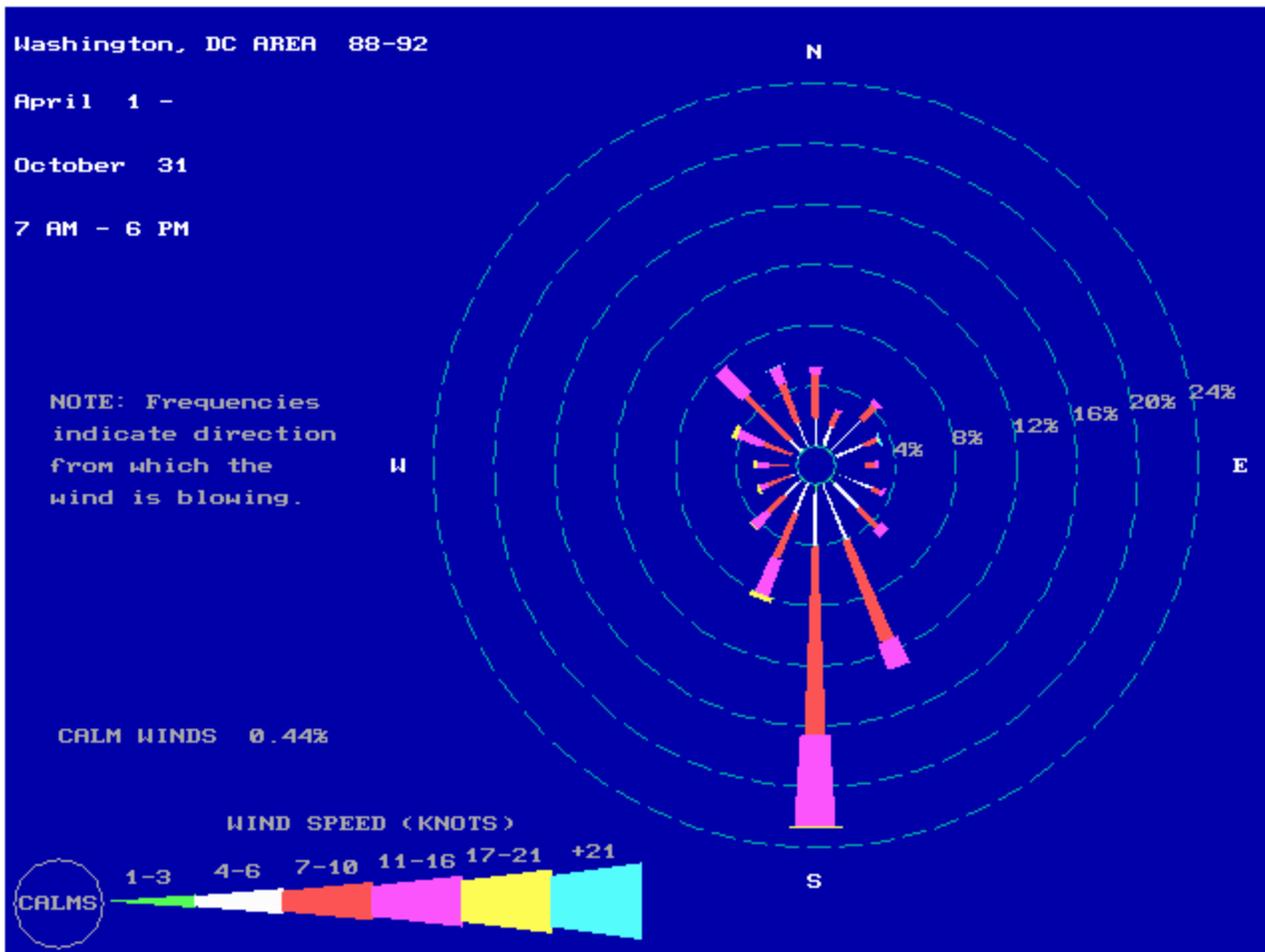
SIGNED

  
(Charles Flippo, Chief, Garrison Environmental Office)

# Appendix H Wind Rose Data for Washington, DC



**Wind Rose – Full Ozone Season**



## Wind Rose – Violation Days

*These wind roses were prepared by Pacific Environmental Services, Inc. (PES) using the program WRPLOT that was developed by PES for the U. S. Environmental Protection Agency.*

# Appendix I

## Noise Data



**ACOUSTICAL CONTROL SYSTEMS, INC.**

July 9, 2002

Mr. Craig Hanson  
Alban Engine Power Systems  
6455 Washington Blvd.  
Baltimore, MD 21227

REF: Six (6) Gen-Set Acoustical Enclosure Packaged Assemblies  
Ref: Walter Reed Medical Center  
Acoustical Control Systems Quote No. 020624

Dear Mr. Hanson:

Acoustical Control Systems, Inc. is pleased to present acoustical performance information for the six (6) packaged enclosure assemblies for the above referenced project.

Each acoustical enclosure is designed to reduce the Caterpillar 3512B-1500KW gen-set equipment unsilenced noise levels at full load to meet 65 dBA when measured at a distance of 75 feet from the enclosure and 5 ½ feet above grade in a free field environment as measured by a Type II Sound level meter. These measurements are in accordance with ANSI S1.13 standards method of measurements for SPL values.

Noise levels with 2 or more units running side by side at one time:

- \* 2 units ( add 3 dBA ) = 68 dBA at 75 feet.
- \* 3 units ( add 5 dBA ) = 70 dBA at 75 feet.
- \* 4 units ( add 6 dBA ) = 71 dBA at 75 feet.
- \* 5 units ( add 7 dBA ) = 72 dBA at 75 feet.
- \* 6 units ( add 8 dBA ) = 73 dBA at 75 feet.

These noise level numbers are estimated numbers, actual numbers can be confirmed after an acoustical engineer consultant surveys the job site to see what will be near or around the enclosure units.

If there are any questions regarding the above information, or if additional information is needed, please feel free to contact us at any time.

4200 TEXOMA PARKWAY · SHERMAN, TEXAS, 75090 · (903) 868-4111 · FAX (903) 868-4110

*Sincerely,*

A handwritten signature in black ink, appearing to read "John Puentes". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

**John J. Puentes**  
**President**

***Acoustical Control Systems, Inc.***

## Acronyms and Abbreviations

ACM	Asbestos-Containing Materials
AFIP	Armed Forces Institute of Pathology
AR	Army Regulation
ARNG	Army National Guard
AST	Above ground fuel storage tank
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
DA	Design Analysis
DERA	Defense Environmental Restoration Act
DCMR	District of Columbia Municipal Regulations
DC SHPO	District of Columbia – State Historic Preservation Office
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EPS	Emergency Power Supply, or Generator
EPSS	Emergency Power Supply System, or, all components comprising the alternate power source
FNSI	Finding of No Significant Impact
GEO	Garrison Environmental Office
HEP	Hospital Energy Plant
HSMS	Hazardous Substance Management System
HVAC	Heating, Ventilation and Air Conditioning
IAQ	Indoor Air Quality
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
LBP	Lead Based Paints
MEDCOM	US Army Medical Command
MIL HNBK	Military Handbook
MSL	Mean Sea Level
NA	No Action
NAA	No Action Alternative
NAAQS	National Ambient Air Quality Standards
NARMC	North Atlantic Regional Medical Command
NCPC	National Capital Planning Commission
NEC	National Electric Code
NEPA	National Environmental Policy Act
NARMC	North Atlantic Regional Medical Command
NOx	Oxides of Nitrogen
NFPA	National Fire Protection Association
O <sub>3</sub>	Ozone
PA	Proposed Action

Pb	Lead
PCB	Polychlorinated Biphenyls
PLS	Planning Level Surveys
PM-10	Particulate Matter
PPE	Personal Protection Equipment
RTESS	Rare, Threatened and Endangered Species Survey
SARA	Superfund Amendments and Reauthorization Act
SO <sub>2</sub>	Sulfur Dioxide
SPCC	Spill Prevention Control & Countermeasures
USAR	U.S. Army Reserve
USFWS	U.S. Fish & Wildlife Service
UST	Underground fuel storage tank
WRAIR	Walter Reed Army Institute of Research
WRAMC	Walter Reed Army Medical Center