DRAFT FINDING OF NO SIGNIFICANT IMPACT (FNSI)

U.S. ARMY MEDICAL RESEARCH INSTITUTE OF CHEMICAL DEFENSE (MRICD) MISSION ACTIVITIES AT ABERDEEN PROVING GROUND-EDGEWOOD AREA, MARYLAND

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (USC) Sections 4321 *et. seq.*, and 32 CFR § 651, Environmental Analysis of Army Actions, the U.S. Department of the Army (DA) has prepared a Programmatic Environmental Assessment (PEA) to assess the potential environmental consequences associated with MRICD to continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and chemical casualty care (CCC) education/training activities in Aberdeen Proving Ground's Edgewood Area (APG-EA). The decisions included in this FNSI are based upon information contained in the PEA, which analyzed potential environmental consequences that could result from implementation of the Proposed Action and the No Action Alternative.

Introduction

This PEA provides National Environmental Policy Act (NEPA) analysis and documentation for the Proposed Action, which is for MRICD to continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and CCC education/training activities at APG-EA. The Proposed Action for this PEA is for the MRICD to continue performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from MRICD training/education; medical research/development; collaboration/consultation; and potential facility improvement activities planned to occur over the next 5 to 7 years.

In accordance with Army NEPA regulations (32 Code of Federal Regulations [CFR] Part 651.21), this Finding of No Significant Impact (FNSI) hereby incorporates the entire PEA by reference.

1. Purpose and Need

The purpose of the Proposed Action is for MRICD to continue to develop medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation. The Proposed Action is needed to protect U.S. warfighters and the Nation from proliferating chemical, biochemical, and other non-kinetic threats.

Prior environmental analysis of MRICD medical chemical research/development and CCC training conducted in 2004 (U.S. Army Medical Research and Materiel Command [USAMRMC]) is almost 20 years old. While much of the analysis done at the time is still pertinent, the scope of MRICD research programs has broadened to address newer and/or changing threats that have arisen since that time. Subsequent analysis done in 2007 (APG) for the construction of the current MRICD campus completed in 2014 was limited to the impacts posed by facility construction and did not address those linked with mission activities.

The Proposed Action is therefore needed to ensure MRICD medical countermeasures research/development and education/training for chemical, biochemical, and other non-kinetic threats can continue to address threats posed to U.S. warfighters and the Nation.

2. Description of the Proposed Action and Alternatives

Chapter 3 of the PEA presents a discussion of the alternatives evaluated. For alternatives to be considered reasonable and warrant further detailed analysis, they must meet the purpose of and need for the action and screening criteria, be affordable, and implementable. An alternative that was considered, but only analyzed in summary within this PEA, would utilize an alternative site other than APG-EA for continued and future MRICD mission activities. This would involve the relocation of MRICD labs, personnel, and/or CCC education/training to an alternate location. While use of an alternate DoD site might be appropriate for one aspect of MRICD's core capabilities, there are no other sites that can currently host the full complement of medical chemical countermeasures research/development and education/training activities conducted at the APG-EA. The DoD has designated the MRICD as the U.S.

national asset for research and development of medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation. That distinction is based on defense expertise, infrastructure, and support systems developed at the APG-EA since World War I. The use of a location other than APG to host the MRICD activities addressed in this PEA would require years of planning, significant coordination, reviews, approvals and would cost many millions of dollars to execute. Therefore, this PEA does not further evaluate relocating MRICD mission activities to another facility. MRICD did not identify any other alternatives that meet the screening criteria for detailed analysis; therefore, no other alternatives are analyzed in this PEA.

- **The Proposed Action Alternative -** The Proposed Action for this PEA is for the MRICD to continue performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to 7 years.
- **No Action Alternative -** Under the No Action Alternative, the MRICD missions would continue; however, selection of the No Action Alternative would mean that MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data.

3. Environmental Analysis

Environmental Consequences and Comparison of Alternatives: Chapter 4 of the PEA discusses the affected environment and potential environmental consequences for the Proposed Action and the No Action Alternative by resource area. This PEA focuses on those resources that may face more than a negligible impact from the Proposed Action. Accordingly, the following three resource areas were screened out from further evaluation in the PEA: Land Use, Traffic and Transportation, and Airspace. These resource areas were not retained for further analysis within the EA.

The implementation of the Proposed Action is not anticipated to result in adverse significant environmental impacts. Potential permits, plans, and measures to reduce adverse impacts identified within the PEA analysis are also included and support the impacts determinations presented.

Cumulative Impacts: For the purposes of this PEA, cumulative impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of who undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Given the localized nature of the Proposed Action, a Study Area has been defined for evaluation of potential impacts to human and natural resources within one-half mile of the MRICD facility. This constitutes the Proposed Action's Region of Influence (ROI) for cumulative effects. This ROI includes areas where the Proposed Action's effects would most likely contribute to cumulative environmental effects.

4. Public Review and Comment:

Public participation opportunities with respect to this PEA and decision making on the Proposed Action are guided by 32 CFR Part 651. A Notice of Availability has been advertised in *The Baltimore Sun* and the Harford County *Aegis* announcing the availability of the draft PEA and the draft Finding of No Significant Impact (FNSI) for a 15-day public review period. A hard copy of the draft PEA and draft FNSI has also been placed in the Edgewood Branch of the Harford County Public Library.

5. Finding of No Significant Impact (FNSI):

I have considered the results of the analysis in the PEA, the comments received during the public comment period, and associated cumulative effects. Based on these factors, I have decided to proceed with the Proposed Action and the continuation of performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to 7 years to ensure MRICD medical countermeasures research/development, education and training for chemical, biochemical and other non-kinetic threats can continue to address threats posed to U.S. warfighters and the Nation, that along with specified permits, plans and measured identified, will not have a significant impact on the quality of human life or natural environment. This analysis fulfills the requirements of the NEPA of 1969, as well as the requirements of the Environmental Analysis of Army Actions (32 CFR Part 651). Therefore, issuance of a FNSI is

warranted, and an Environmental Impact Statement is not necessary.

_____ _____

Philip J. Mundweil
Colonel, U.S. Army
Commander, U.S. Army Garrison
Aberdeen Proving Ground, Maryland

Date

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PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

FOR

U.S. ARMY MEDICAL RESEARCH INSTITUTE OF CHEMICAL DEFENSE (MRICD) MISSION ACTIVITIES

AT

ABERDEEN PROVING GROUND-EDGEWOOD AREA, MD

U.S. Army Garrison Aberdeen Proving Ground

Directorate of Public Works—Environmental Division

March 2025

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ACRONYMS AND ABBREVIATIONS

%	percent
µg/m^3	micrograms per cubic meter
ADNL	A-weighted day-night levels
amsl	above mean sea level
APG	Aberdeen Proving Ground
APG-AA	Aberdeen Proving Ground-Aberdeen Area
APG-EA	Aberdeen Proving Ground-Edgewood Area
APGR	Aberdeen Proving Ground Regulation
AR	Army Regulation
BGE	Baltimore Gas and Electric
CAA	Clean Air Act
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosives
CCC	chemical casualty care
CCCD	Chemical Casualty Care Division
CDNL	C-weighted day-night levels
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH4	methane
CHS	Controlled Hazardous Substance
CO	carbon monoxide
CO_2	carbon dioxide
COMAR	Code of Maryland Regulation
CWA	chemical warfare agent
CWM	chemical warfare material
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DA	Department of the Army
dB	decibel
dBA	A-weighted decibel
DEVCOM	Combat Capabilities Development Command
DNR	Department of Natural Resources (Maryland)
DoD	United States Department of Defense
DOE	Determination of Eligibility
DOT	Department of Transportation
DPW	Directorate of Public Works
DPW-ED	Directorate of Public Works – Environmental Division
DPW-WMB	Directorate of Public Works – Waste Management Branch

EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	executive order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FCBC	Field Management of Chemical and Biological Casualties
FFA	Federal Facilities Agreement
FNSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FY	fiscal year
GCR	General Conformity Rule
HAP	hazardous air pollutant
HAZCOM	hazard communication
IAP	Installation Action Plan
ICRMP	Integrated Cultural Resources Management Plan
ICUZ	Installation Compatible Use Zone
IEMP	APG Installation Emergency Management Plan
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
LP	liquid propane
LUPZ	Land Use Planning Zone
MBIAQCR	Metropolitan Baltimore Intrastate Air Quality Control Region
MBTA	Migratory Bird Treaty Act
MCBC	Medical Management of Chemical and Biological Casualties
MDE	Maryland Department of the Environment
mgd	million gallons per day
MGS	Maryland Geological Survey
MHT	Maryland Historical Trust
MRICD	Medical Research Institute of Chemical Defense
N_2O	nitrous oxide
n/a	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NLEB	northern long-eared bat
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPL	National Priorities List

NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	ozone
OSHA	Occupational Safety and Health Administration
P2	pollution prevention
Pb	lead
PEA	Programmatic Environmental Assessment
$PM_{2.5}$	particulate matter less than 2.5 microns
PM_{10}	particulate matter less than 10 microns
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
REC	Record of Environmental Consideration
ROI	Region of Influence
SAV	submerged aquatic vegetation
SCIF	Secure Compartmented Information Facility
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO	Safety Office
SO_2	sulfur dioxide
SO_x	sulfur oxides
SOP	Standard Operating Procedure
TPO	thermoplastic polyolefin
tpy	tons per year
UPS	uninterruptible power supply
USACE	United States Army Corps of Engineers
USAMC	United States Army Materiel Command
USAMRDC	United States Army Medical Research and Development Command
USAMRMC	United States Army Medical Research and Materiel Command
U.S.	United States
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTV	Utility Vehicle
UXO	unexploded ordnance
VIMS	Virginia Institute of Marine Sciences
VOC	volatile organic compound

WMD	Weapons of Mass Destruction
WRA	Whitman, Requardt & Associates
WTP	water treatment plant

1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

This Programmatic Environmental Assessment (PEA) provides National Environmental Policy Act (NEPA) analysis and documentation for the Proposed Action, which is for the United States (U.S.) Army Medical Research Institute of Chemical Defense (MRICD) to continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and chemical casualty care (CCC) education/training activities in Aberdeen Proving Ground's Edgewood Area (APG-EA).

Aberdeen Proving Ground (APG) occupies approximately 72,283 acres of land and water (U.S. Army Garrison APG 2022a) in the northwestern reaches of the Chesapeake Bay. The Bush River divides the installation into two non-contiguous areas: to the east is the Aberdeen Area (APG-AA) encompassing 29,843 acres, and to the west is APG-EA encompassing 11,731 acres (**Figure 1-1**). Contiguous waters of APG account for an additional 30,276 acres. Other off-site areas of APG not attached to the main installation account for the remaining acreage. These include the Churchville Test Area, Van Bibber Water Treatment Plant (WTP), Atkisson Reservoir and Dam, and Pooles Island in Harford County; Carroll Island and Graces Quarters in Baltimore County; Eastern Shore Towers in Kent County; Adelphi Laboratory Center in Montgomery and Prince George's Counties; and Blossom Point Research Facility in Charles County, Maryland. Baltimore is the closest major city to APG-EA and is located approximately 34 miles southwest of the installation (U.S. Army Garrison APG 2022a).

Military use of APG began in 1917 when the government acquired APG-AA and established the Ordnance Proving Ground. APG-EA was also acquired in 1917 and was established as the Edgewood Arsenal. These two facilities operated independently until 1971, when the Edgewood Arsenal became a part of APG. APG-EA was historically used as a center for military chemical agent research, development, and related activities. Specific activities included laboratory research, field testing of chemical warfare material (CWM) and munitions, and pilot-scale and production-scale CWM manufacturing. APG-EA has also been a center for CWM storage and a major receiving center for waste, including low- level radiological waste (U.S. Army Garrison APG 2022a).

Currently, APG-EA is home to a cantonment area, laboratories, housing, multiple training areas on its northern portion, and several test ranges on the southern portion (also referred to as Gunpowder Neck) (U.S. Army Garrison APG 2022a).

The focus of this PEA is on MRICD's medical chemical countermeasures research/development and CCC education/training activities conducted within APG-EA. The PEA examines the potential environmental impacts of these activities over the next 5 to 7 years based on internal MRICD strategic planning projections.

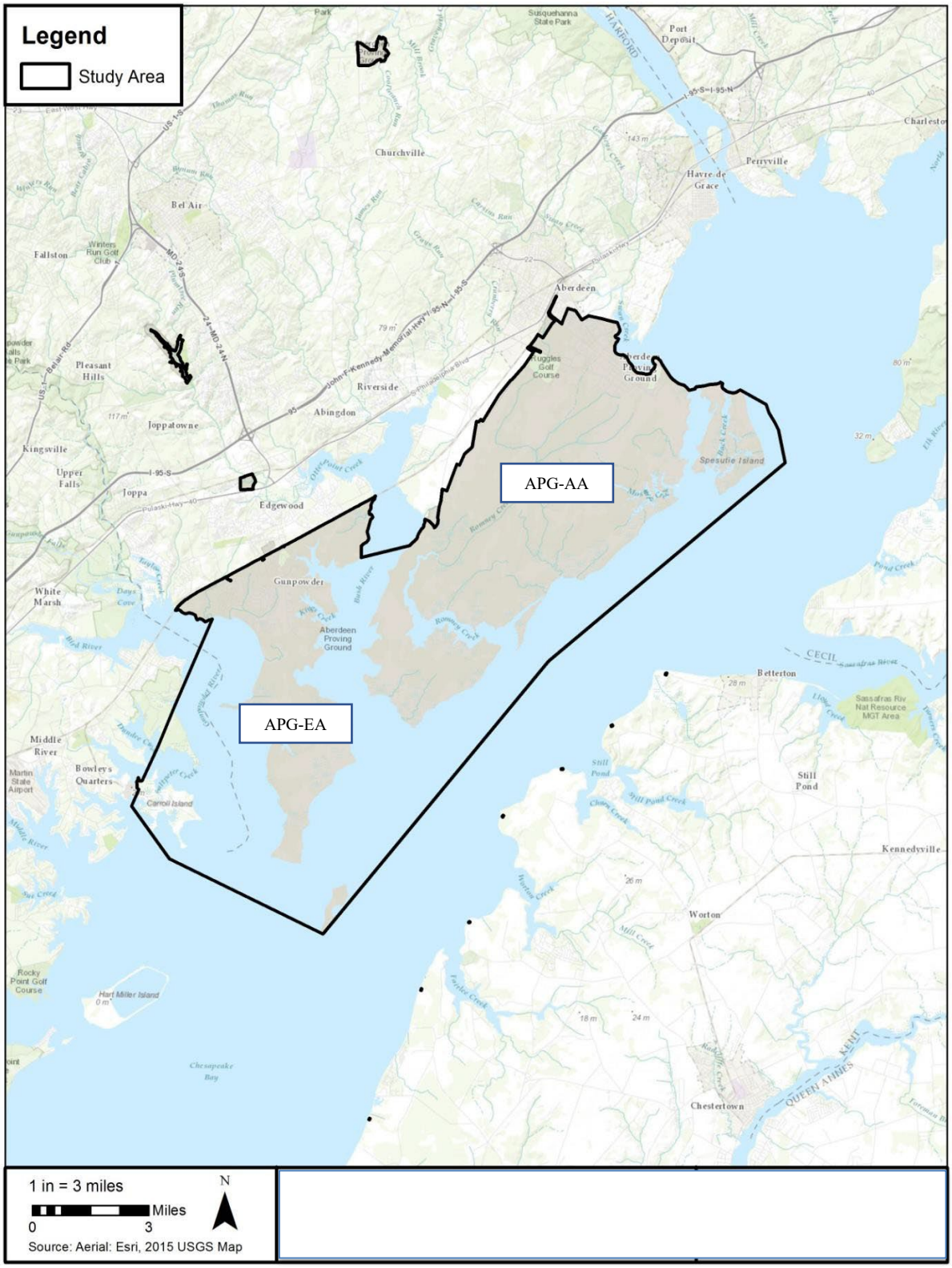

Figure 1-1. Location Map

The MRICD occupies a 20-acre active campus in APG-EA. The site includes approximately 3.5-acres of asphalt parking areas, 3 small buildings for maintenance administration and training activities, and a 526,000 square foot facility that houses specialized laboratory spaces, a large vivarium, administrative support areas, auditorium, medical library and training lab, utility spaces, and materials receiving and shipping areas. In addition, there is a 1-acre field training site consisting of a covered pavilion, combined classroom/storage facility, and a small outdoor classroom/training area.

Within the MRICD, there are scientists, technicians, administrative support staff and facility maintenance personnel. All contribute to MRICD's medical chemical/biochemical/non-kinetic research, education/training, consultation/collaboration, and/or facility operation/maintenance activities discussed further in Section 2.

As the nation's leading science and technology laboratory in the area of medical chemical countermeasures research and development, MRICD manages and/or performs a variety of project activities both internally and in collaboration with academia, private industry, federal, state, local, and foreign governments throughout the world. MRICD's scientific expertise, unique facilities, and collaborative reach provide world-class solutions to protect the warfighter and our communities.

This PEA is prepared in accordance with NEPA of 1969; and 32 CFR Part 651, *Environmental Analysis of Army Actions* (hereafter referred to as 32 CFR Part 651).

A PEA, by design, allows for greater efficiency in making informed decisions, reflects the need to coordinate multiagency reviews, and ensures meaningful public engagement in the decision-making process. To achieve these goals, the PEA should lay out in sufficient detail those activities forecasted to fall within the scope of the Proposed Action. It is essential that Army planners examine each action to determine whether environmental ramifications are within the scope of the Proposed Action and analysis described within this PEA. If a circumstance arises where environmental impacts are suspected to be significant and/or outside the scope of this PEA, the Army would conduct additional environmental review and analysis.

Subsequent NEPA reviews for future actions may be tiered from this PEA, thereby eliminating duplicate discussions where a reference to this document may be appropriate. In most instances, MRICD research, training, and facility actions conducted over the next 5 to 7 years will likely be covered by categorical exclusions that will require a Record of Environmental Consideration (REC). Others may be found to not meet screening criteria; they may be segmented or present exceptional circumstances that would disallow the application of a categorical exclusion. In those instances where RECs are required and/or additional analysis is needed, reference to an encompassing PEA will streamline the NEPA process. Should actions arise that portend potential adverse environmental impacts beyond the scope of the PEA, MRICD will prepare additional NEPA documentation, such as a supplemental Environmental Assessment (EA).

1.2 Purpose and Need

The purpose of the Proposed Action is for MRICD to continue to develop medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation. The Proposed Action is needed to protect U.S. warfighters and the Nation from proliferating chemical, biochemical, and other non-kinetic threats.

Prior environmental analysis of MRICD medical chemical research/development and CCC training conducted in 2004 (U.S. Army Medical Research and Materiel Command [USAMRMC]) is almost 20 years old. While much of the analysis done at the time is still pertinent, the scope of MRICD research programs has broadened to address newer and/or changing threats that have arisen since that time. Subsequent analysis done in 2007 (APG) for the construction of the current MRICD campus completed in 2014 was limited to the impacts posed by facility construction and did not address those linked with mission activities.

The Proposed Action is therefore needed to ensure MRICD medical countermeasures research/development and education/training for chemical, biochemical, and other non-kinetic threats can continue to address threats posed to U.S. warfighters and the Nation.

1.3 Scope of the Programmatic Environmental Assessment

As noted, prior EAs evaluating MRICD's activities have been prepared per the requirements of NEPA. This PEA integrates and augments previous analyses in accordance with 32 CFR § 651.1(c).

This PEA's scope consists of the range of actions, alternatives, and impacts to be considered. The analysis is intended to address the potential environmental consequences of MRICD performing ongoing and future medical chemical countermeasures research/development and education/training on APG-EA over the next 5 to 7 years. A PEA can adequately evaluate environmental impacts of those programs that are similar in nature or broad in scope (32 CFR § 651.14(c)). MRICD research/development and education/training activities are forecasted to continue into the foreseeable future. A PEA can minimize redundant analyses and reduce the need for numerous repetitive NEPA documents during that time. It is anticipated this PEA will adequately address MRICD's forthcoming mission and facilities activities on APG-EA. Nonetheless, APG's NEPA coordinator will review each proposed activity on a case-by-case basis. In consultation with MRICD personnel and various subject matter experts on natural, environmental, and cultural resources, he/she will determine whether the proposed activity is adequately addressed by this PEA and whether a REC or higher level of NEPA analysis is required. If it is determined that this PEA does not cover the proposed activity, then APG's NEPA coordinator will provide further direction to MRICD on how to proceed with additional NEPA analysis.

Based on the level of analyses provided in the current PEA and forecasted MRICD mission activities for the next 5 to 7 years, it is anticipated that there would be no significant impacts from the Proposed Action. If, however, it is found that a significant impact may occur, an Environmental Impact Statement (EIS) would be prepared.

Analysis of potential impacts from the Proposed Action follows the descriptions of each resource area in the affected environment in Section 4.0 of this document. MRICD has identified the following resources for evaluation in this PEA:

- Air Quality;
- Noise;
- Cultural Resources;
- Socioeconomics and Protection of Children;
- Geology, Soils, and Topography;
- Water Resources;
- Coastal Zone;
- Biological Resources;
- Human Health & Safety;
- Facilities, Infrastructure, and Utilities; and,
- Contaminated Materials, Solid and Hazardous Wastes.

This PEA focuses on those resources that may face more than a negligible impact from the Proposed Action. Accordingly, the following three resource areas were screened out from further evaluation in the PEA: Land Use, Traffic and Transportation, and Airspace. Based on the following information, there are no anticipated impacts to land use, traffic and transportation, and airspace. For land use, all research and development activities take place indoors within stringent engineering controls, and field training activities conducted in the spring and fall months do not cause any discernible land disturbance. Regarding traffic and transportation, access to the MRICD campus is via paved secondary roadway. There is currently ample

parking for the approximately 300 personnel that work in the facility. Traffic volumes range from moderate in the morning and afternoons to very low the balance of the day. Absent a significant increase in facility personnel, there should be no notable impacts to traffic volume. Lastly, the Proposed Action would not lead to any change in flight courses, altitude, or instrument procedures that could affect airspace.

1.4 Laws and Regulations

Regulations that may apply to the operations and activities from MRICD research/development, education/training, and facilities operations include State of Maryland and federal regulations that implement the following laws: Clean Air Act (CAA), Clean Water Act, Endangered Species Act (ESA), Coastal Zone Management Act (CZMA), Resource Conservation and Recovery Act, and Emergency Planning and Community Right-to-Know Act (EPCRA). Also applicable are U.S. Army and other federal health and safety regulations and guidance such as: Department of the Army (DA) Pamphlet 385-10, *The Army Safety Program;* DA Pamphlet 385-61, *Toxic Chemical Agent Safety Standards*; Centers for Disease Control and Prevention guidance on laboratory safety; the U.S. Army Radiation Safety program; Food and Drug Administration Good Laboratory Practice; and U.S. Department of Agriculture Animal and Plant Health Inspection Service regulations. Note: this list is not all-inclusive and other federal, state, and local regulations may apply.

1.5 Other Related NEPA Documents

APG and MRICD have completed numerous EAs and RECs to identify and evaluate potential impacts from mission activities on the natural and built environment at, and surrounding, the APG-EA. These analyses concluded no significant adverse impacts to the environment would occur from the specific activities assessed. Additionally, APG has published various management plans to identify environmental and cultural resources throughout APG-AA and APG-EA along with procedures for managing, protecting, and preserving these resources in concert with military missions and applicable federal and state regulations. These prior NEPA documents, along with selected APG management plans and other published reports, were considered in the development of this PEA.

1.6 Public Involvement

Coordination with federal and state agencies, including the U.S. Fish and Wildlife Service (USFWS); the U.S. Environmental Protection Agency (USEPA); the Maryland Department of the Environment (MDE); Maryland Department of Natural Resources (DNR); and the Maryland Historical Trust (MHT) was initiated for the Proposed Action. Copies of coordination letters and agency responses are located in **Appendix A** (Agency Coordination).

Public participation opportunities with respect to this PEA and decision making on the Proposed Action are guided by 32 CFR Part 651. A Notice of Availability has been advertised in *The Baltimore Sun* and the Harford County *Aegis* announcing the availability of the draft PEA and the draft Finding of No Significant Impact (FNSI) for a 15-day public review period. A hard copy of the draft PEA and draft FNSI has also been placed in the Edgewood Branch of the Harford County Public Library.

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2 DESCRIPTION OF THE PROPOSED ACTION

MRICD has the mission to perform critical work necessary to develop medical countermeasures against chemical, biochemical, and non-kinetic threats to the U.S. warfighter and the Nation and to provide critical medical training to government and civilian first responders, medical practitioners, and others tasked to manage the medical aspects of chemical, biological, radiological, nuclear, and explosive incidents (CBRNE). The Proposed Action for this PEA is for the MRICD to continue performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from MRICD training/education; medical research/development; collaboration/consultation; and potential facility improvement activities planned to occur over the next 5 to 7 years. The following subsections of Section 2.0 break out and further describe these mission areas/programs which constitute the planned activities under the Proposed Action.

2.1 Training and Education Activities

The MRICD Chemical Casualty Care Division (CCCD) conducts classroom/laboratory and field training activities for U.S. Department of Defense (DoD), other federal agencies, state partners, and allied countries.

MRICD hosts three on-site, in-residence courses in the APG-EA, and periodically provides additional courses and consultation services to off-site customers around the country and overseas. The three in-resident courses include the following:

- Medical Management of Chemical and Biological Casualties (MCBC);
- Field Management of Chemical Biological Casualties (FCBC); and,
- Hospital Management of CBRNE.

Courses provide classroom education and hands-on casualty care training services to first responders, medical professionals, and administrators that plan for and may deal with medical sequelae and other impacts resulting from weapons of mass destruction (WMD) incidents. Instruction varies among courses, but generally includes the following topics/areas addressed via a combination of classroom lectures, interactive discussions, and hands-on lab and field simulations and exercises:

- WMD emergency response structure/organization/responsibilities;
- Hazard recognition;
- Detection, decontamination, personal protective equipment (PPE);
- Field/clinical triage and patient care;
- WMD case studies and exercises; and,
- Impacts of WMD events on medical personnel and healthcare facilities.

Training and education facilities at MRICD include a classroom/auditorium, a specialized library, and a simulation lab to replicate chemical casualties and enable practice of critical medical skills. There is also a simulator to train medical professionals in battlefield, homeland defense, and natural disaster scenarios.

In addition, the CCCD utilizes a 1-acre outdoor site to conduct CCC field training activities for the MCBC and the FCBC courses. The CCCD conducts nine classes (four MCBC and five FCBC) annually. The field site is used four times (four days a month) during each MCBC course and three times (three days a month) during each FCBC course.

During training activities at the field site, the CCCD instructs students on the triage and management of casualties resulting from CBRNE-related incidents. Training activities utilize various props, supplies, and equipment; some items are expendable/disposable, others are not. The following are expendable items used during each class (monthly) at the field site that are disposed of at the completion of training:

1. **Training Joint Service Lightweight Integrated Suit Technology (Overgarment):** This item is cut to simulate overgarment removal from patients. The cut pieces are disposed as trash in a dumpster at the field site. A contracting company removes the trash for disposal.
2. **Autoinjectors (Expired Antidote Treatment Nerve Agent Auto-injector; AtroPen):** The autoinjectors are injected in a manikin thigh pad. The spent injectors are placed in a puncture-resistant poly drum which is collected by an Installation hazardous waste contractor for off-site disposal.
3. **Fresh Gear, a concentrated quaternary-ammonium germicidal detergent:** Fresh Gear is mixed with water to make cleaning solution to sanitize masks after each class. After mask sanitizing, the non-hazardous solution is moved from the field training site and disposed. Sink effluent is discharged to the APG-EA sanitary sewer and Edgewood area wastewater treatment plant. MRICD follows APG Regulation (APGR) 200-41, *Water Quality Management*, for discharges to the sanitary sewer. Only non-hazardous solutions, previously approved by Directorate of Public Works – Waste Management Branch (DPW-WMB), are permitted for discharge within the MRICD facility.
4. **Clean Gear II Towelettes:** These towelettes are utilized to wipe/sanitize masks after usage. The used, non-hazardous towelettes are disposed as trash in a dumpster at the field site which is emptied every two weeks by the Installation refuse disposal contractor.
5. **Trash:** The training activities at the field site generate minimal trash, which is disposed of in a dumpster at the field site. The Installation refuse contractor periodically removes the trash from the dumpster for disposal every two weeks.
6. **Utility Vehicle (UTV):** The CCCD utilizes the UTV on average once a week (4 times a month) for approximately one-hour actual run time to move materiel from main campus to the field training area for course preparation and field training set up. Vehicle emissions produced by the UTV during this short time are minimal.

At the conclusion of each field training event, CCCD personnel and/or participants collect all utilized supplies and equipment. Reusable items are returned to the training site's support building for proper storage. Expendable items are collected and disposed of in accordance with MRICD Standard Operating Procedures (SOPs) and Installation regulations/guidance. Additional information on the types of wastes generated from field training activities and their disposition are addressed in Sections 4 and 5.

Current monthly activities at the field site for the MCBC and FCBC courses are not expected to change in the next ten years except for minimal fluctuations of student attendance based on multiple unknown future factors (world events, conflicts, etc.).

2.2 Medical Research and Development

Medical research and development activities conducted at MRICD include the development of chemical countermeasures such as antidote therapies, pretreatment measures, topical skin protectants, and treatments that reverse or reduce the toxicity of chemical agents for the improved management of casualties. In addition, fundamental and applied research is performed on the biochemistry, pathology, pharmacology, physiology and toxicology of chemical agents and their medical countermeasures. The development of countermeasures involves extensive screening designed to advance those drugs and therapies that are identified as the safest and most effective against a particular chemical threat.

2.2.1 Research Program Areas[1]

2.2.1.1 Toxin Countermeasures

MRICD discovers and develops medical countermeasures and knowledge solutions against biological toxins. There are various toxin countermeasure research topics that include modulators of synaptic transmission (to mitigate muscle paralysis); protease inhibitors (e.g., small molecule inhibitors of botulinum neurotoxin); and growth factors (to accelerate recovery from muscle paralysis).

2.2.1.2 Nerve Agent Countermeasures

MRICD mitigates or eliminates acute and long-term toxic effects of nerve agent exposure. Some examples of nerve agent countermeasure study areas are pretreatments (e.g., protect acetylcholinesterase from being inhibited); anticholinergics (e.g., to mitigate/eliminate effects of excess acetylcholine); anticonvulsants (e.g., to control nerve agent-induced seizures); neuroprotectants (e.g., to protect neurons from nerve agent-induced injury); and reactivators (e.g., to reactivate inhibited acetylcholinesterase).

2.2.1.3 Toxicant Countermeasures

MRICD discovers and develops medical countermeasures and knowledge solutions against a wide range of non-nerve agent chemical threats. The primary toxicant countermeasure research topics are pulmonary toxicants (e.g., chemicals that injure the respiratory system such as chlorine, phosgene, phosphine, and ammonia); vesicants (e.g., chemicals that injure the skin, eyes, and mucous membranes such as sulfur mustard, chloropicrin, and hydrogen fluoride); and metabolic poisons (e.g., chemicals that disrupt metabolic processes such as cyanide and sodium fluoroacetate).

2.2.1.4 Analytics

MRICD develops and implements analytical methods to support chemical countermeasure research and development. Examples of analytic work topics are lab diagnostics (e.g., verification of human exposure to chemical warfare agents [CWAs]; field diagnostics (e.g., development of next generation point-of-injury diagnostics); and development of laboratory methods for validation and use in a high complexity clinical laboratory for diagnostic testing on human samples from the battlefield to confirm exposure to chemical agents.

2.2.1.5 Agent Mitigation

MRICD mitigates the medical consequences of exposure to chemical threats by removal from the skin or detoxification *in vivo* (within a living organism). There are various agent mitigation research topics such as *in vivo* protection (e.g., compounds that catalyze the elimination of nerve agents) and skin decontamination and barrier creams (e.g., neutralizing chemical threats in biological matrices).

2.2.1.6 Pharmaceutical Sciences

MRICD discovers and develops medical countermeasures and knowledge against pharmaceutical-based agents. Examples of pharmaceutical science research topics are medical countermeasure against synthetic opioids.

2.2.1.7 Combined Injury

MRICD develops knowledge solutions for treating traumatic injuries in a chemically contaminated

[1] Material in this section is pulled from the following reference: MRICD. n.d.(a) Research Program Areas. Retrieved from https://usamricd.health.mil/research/program-areas/Pages/default.aspx. *Accessed September 15, 2022.*

environment. This research area is focused on determining the best way to utilize chemical medical countermeasures when an individual has sustained a traumatic injury (e.g., hemorrhage, severe burn, traumatic brain injury) and has also been exposed to a chemical agent. Research into the most effective treatment strategies will inform clinical practice guidelines and inform medical care in an environment where casualties cannot be evaluated rapidly and must be treated in the field for extended periods of time.

2.2.1.8 Animal Care and Use

MRICD manages a vivarium and research animal population to support the development and testing of countermeasures. MRICD's animal use and care meet or exceed U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service regulations (9 CFR, Chapter I, Subchapter A) for animal care, DoD Instruction 3216.01, *Use of Animals in DoD Conducted and Supported Research and Training*, and is accredited every 3 years by the Association for Assessment and Accreditation of Laboratory Animal Care.

The MRICD Veterinary Medicine and Surgery Department provides laboratory research support, animal care, postgraduate training in laboratory animal medicine, review of experimental animal research protocols and consultation in matters regarding the care and use of animals.

MRICD uses only the minimum number of animals required to obtain statistically valid experimental results. MRICD's Animal Care and Use Committee reviews all animal-related training and animal use protocols to ensure compliance with USDA, Army, and DoD regulations.

2.2.2 Product Development[2]

All currently available medical countermeasures against CWAs, to include cholinolytic antidotes, oxime enzyme reactivators, carbamate pretreatments, benzodiazepine anticonvulsants, reactive skin decontaminants, and topical skin protectants, were either fully developed at the MRICD or had most preclinical efficacy testing done at the MRICD prior to U.S. Food and Drug Administration licensure.

Examples of products that have been developed by MRICD include:

- *Nerve Agent Antidote Kit* (consisting of atropine and 2-PAM);
- *Convulsant Antidote Nerve Agent* (consisting of diazepam to reverse seizures induced by nerve agents);
- *Multichambered Autoinjector* (to expedite delivery of nerve agent treatments);
- *Soman Nerve Agent Pretreatment Pyridostigmine* (for enhanced protection against the chemical warfare nerve agent soman);
- *Testmate® Cholinesterase Kit* (to expediate field testing exposure to nerve agents);
- *M291 Decontamination Kit*; and,
- *Skin Exposure Reduction Paste Against Chemical Warfare Agents*.

2.2.3 Publications

MRICD staff continuously publishes research articles in numerous peer-reviewed scientific journals as well

[2] The first paragraph in this section is pulled from the following reference: MRICD. n.d.(b) Products. Retrieved from https://usamricd.health.mil/research/Pages/Products.aspx. *Accessed September 15, 2022.* The second paragraph in this section (i.e., the list of example products) is pulled from the following reference: MRICD. 2020. MRICD Information Paper. Retrieved from https://mrdc.health.mil/assets/docs/media/publications/Info-Paper-USAMRICD.pdf. *Accessed September 22, 2022*.

as textbooks.

2.3 Consultation Activities

2.3.1 Consultation

The MRICD provides consultation to military and civilian authorities in the prevention, preparation, response, recovery, and mitigation of disaster response to mass chemical causalities.

2.4 Facility Improvements

Per the MRICD Facilities Management, MRICD has programmed for the following facility improvements or major laboratory enhancements over the next 5 years:

- Non-Kinetic Threats Lab Upgrades - Renovations to underutilized chemistry labs to support future non-kinetic threat program expansion. Renovations to this space would remove fume hoods, add required utilities, rebalance air flows, and support Anechoic Chambers; and,
- Water Use Reduction Enhancements - MRICD's 500,000 sq. ft. or more facility is always looking to become more efficient and reduce where it can. MRICD is currently looking to reduce its water consumption; MRICD's facility team is exploring options to reduce quenching water used in different facility processes.

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3 ALTERNATIVES CONSIDERED

3.1 Proposed Action

The Proposed Action for this PEA is for the MRICD to continue performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to 7 years.

3.2 No Action Alternative

The regulations reflected in 32 CFR Part 651 require analysis of a No Action Alternative in all NEPA documents. The No Action Alternative serves as the baseline against which the impacts of implementing the Proposed Action are measured.

Under the No Action Alternative, the MRICD missions would continue; however, selection of the No Action Alternative would mean that MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data.

3.3 Screening Criteria

The Army's NEPA regulations (i.e., 32 CFR Part 651) require reasonable alternatives to be evaluated. MRICD established the following screening criteria to identify alternatives that would meet the purpose of and need for the Proposed Action. The Army used the following screening criteria to identify reasonable alternatives:

- ***Mission Compatibility***

  The alternative must align with MRICD mission-related activities at APG in synergy with co-located commands such as the Combat Capabilities Development Command (DEVCOM); the 20th CBRNE Command; and others.

- ***Compliance with Congressional, U.S. Department of Defense, and Army Requirements***

  The alternative must comply with Congressional mandates and the DoD and Army requirements. MRICD medical chemical countermeasures research/development and CCC education and training are authorized and/or coordinated through a line of authority that extends from Congress through the DoD, the DA, and U.S. Army Medical Research and Development Command (USAMRDC). The USAMRDC approves work for MRICD and its other subordinate research labs, ensuring that each works within a defined line-of-effort, and that there is minimal redundancy among labs in addressing identified research targets. Any selected alternative would have to fall within the boundaries of this hierarchal strategic planning arrangement and meet stringent Congressional, DoD, and Army security requirements for the handling of toxic chemical agents.

- ***Alignment with Short and Long-term Plans***

  The alternative must provide capabilities and logistics support to allow for uninterrupted MRICD mission activities over the next 5 to 7 years. MRICD took occupancy of its Congressionally funded, state-of-the art, consolidated medical research facility in the APG-EA. At a cost of several hundred million dollars, the facility was designed to meet DoD and Army strategic medical chemical countermeasures research/development and training/education requirements. In the short-term it would be economically counterproductive to relocate these activities to an alternate facility. Additionally, such an action could result in a significant loss of expertise built over many years if it involved a rapid change in research personnel.

3.4 Alternatives Eliminated from Further Consideration

As part of the NEPA process, potential alternatives to the Proposed Action must be evaluated. For alternatives to be considered reasonable and warrant further detailed analysis, they must meet the purpose and need for the action and screening criteria, be affordable, and implementable.

An alternative that was considered, but only analyzed in summary within this PEA, would utilize an alternative site other than APG-EA for continued and future MRICD mission activities. This would involve the relocation of MRICD labs, personnel, and/or CCC education/training to an alternate location. While use of an alternate DoD site might be appropriate for one aspect of MRICD's core capabilities, there are no other sites that can currently host the full complement of medical chemical countermeasures research/development and education/training activities conducted at the APG-EA. The DoD has designated the MRICD as the U.S. national asset for research and development of medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation. That distinction is based on defense expertise, infrastructure, and support systems developed at the APG-EA since World War I. The use of a location other than APG to host the MRICD activities addressed in this PEA would require years of planning, significant coordination, reviews, approvals and would cost many millions of dollars to execute. Examples of items to consider and address include the following:

- *Costs for Relocation of Specialized, Consolidated Chemical Countermeasures Research Facility:* MRICD's current consolidated research, education and training campus provides a state-of-the-art facility that enables and integrates all facets of chemical/biochemical countermeasures research, development, education, and training. Facility highlights include:
  - numerous chemical, biochemical, analytical, and biological lab spaces;
  - a large animal vivarium;
  - specialized engineering, environmental and security controls for the safe handling of toxic agents;
  - increased heating/ventilation and air-conditioning for 24/7 operations;
  - significant investments in emergency backup power;
  - higher floor load capacities for specialized equipment;
  - increased plumbing for animal husbandry, emergency showers and eyewashes;
  - technical library, auditorium, classrooms, and meeting spaces;
  - multiple loading docks and logistical support space;
  - administrative and facility maintenance support areas; and,
  - adjacent field training site.

  Costs for the relocation of a single core research capability could cost tens of millions of dollars for new construction and/or renovations. Relocation of the entire campus would run several hundred million dollars based on current estimates for a large research lab (i.e., more than 525,000 square feet) with vivarium that run from $500 to $800 (or more) per square foot.
- *Loss of Chem-Bio Defense Synergies and Expertise*: The APG-EA has been designated as the Army's center of excellence for chem-bio defense since World War I. The Installation hosts not only MRICD, but other major players in this space that include the DEVCOM Chemical Biological Center and the 20th CBRNE Command. In addition, there are other Army research, development, testing, and evaluation assets at APG that provide synergies and expertise that enable some of MRICD's mission activities. These include DEVCOM's Army Research Lab and the Defense

Center for Public Health-Aberdeen. The prior hosts needed expertise in the physical sciences and life sciences, while the latter focuses on the environmental and health aspects of chemical and biological agents and contaminants. To relocate MRICD mission activities to an alternate site could result in the loss of considerable expertise and programmatic knowledge base that would require time to redevelop at an alternate location.

Based on these considerations as described, this PEA does not further evaluate relocating MRICD mission activities to another facility. MRICD did not identify any other alternatives that meet the screening criteria listed above for detailed analysis; therefore, no other alternatives are analyzed in this PEA.

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4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 Geology, Soils, and Topography

4.1.1 Affected Environment

4.1.1.1 Geology

APG, including APG-EA, is located in the Atlantic Coastal Plain Physiographic Province which is characterized by low hills, shallow valleys, and flat plains. The regional geology underlying APG-EA consists predominantly of Quaternary Lowland Deposits. Part of the northern portion of APG-EA consists of Cretaceous Age unconsolidated rock of the Potomac Group. The Quaternary Lowland Deposits consist of medium- to coarse-grained sand and gravel, multicolored silt and clay, brown to dark brown lignitic silty clay, and reworked Eocene glauconite. Cobbles and boulders are found near the base of this unconsolidated formation. The thickness of the Quaternary Lowland Deposits ranges from 0 to 150 feet. The Potomac Group is divided into the following three subgroups: the Raritan and Patapsco Formations, Arundel Clay, and Patuxent Formation. The Raritan and Patapsco Formations consist of gray, brown, and red multicolored silts and clay, lenticular, cross-bedded, argillaceous subrounded sands, and minor gravels, with a maximum thickness of approximately 400 feet. The Arundel Clay consists of dark gray and maroon lignitic clay with abundant siderite concretions and has a maximum thickness of about 100 feet. The Patuxent Formation consists of white or light gray to orange-brown, moderately sorted, cross-bedded, argillaceous, angular sands and subrounded quartz gravels, pale gray silts and clay, with a maximum thickness of about 250 feet (Maryland Geological Survey [MGS] 2001).

4.1.1.2 Soils

The USDA Natural Resources Conservation Service (NRCS) performed the most recent soil survey of APG-AA and APG-EA (both within the Atlantic Coastal Plain Physiographic Province) in 1997 and 1998. According to this survey, the predominant soil types on APG include Mattapex, Romney, Udorthents, and Woodstown series. These soil types comprise approximately 60 percent (%) of the total soil types on the installation and are broken down into the following percentages: Romney silt loam (17.8%), Mattapex silt loam (16.0%), Woodstown sandy loam (9.5%), Udorthents loam (8.6%), and Puckum muck (8.1%). In all, there are 39 soil types that cover the installation within the Atlantic Coastal Plain Physiographic Province (NRCS 2013).

There are four major soil series found in APG-EA including Sassafras Series, Keyport Series, Elkton Series, and Marsh sediment (Advanced Sciences, Inc. 1990). The soils of the Sassafras, Keyport, and Elkton Series originated in old marine deposits. The Sassafras Series consists of deep, well-drained, gently sloping to steep, sandy soils with moderate amounts of silt and clay that occur on short steeper slopes and undulating uplands of the Coastal Plain. These soils have moderate permeability and moderate to high water-capacity availability. The Keyport Series consists of deep, moderately well-drained, nearly level and gently sloping, clayey and silty soils that occur on uplands of the Coastal Plain. The Elkton Series consists of deep, poorly drained, nearly level clayey soils that occur on the upland, interfluvial flats of the Atlantic Coastal Plain Physiographic Province. Soils in both the Keyport and Elkton Series have low permeability and high water-capacity availability (USDA Soil Conservation Service [SCS] 1975). The fourth type of soil/sediment is Marsh sediment. Both meadow and tidal marsh sediment are found in APG-EA and constitute mixtures of soil types that represent more of a soil condition than a soil type. The marsh sediment in the meadow areas consist of brackish to saline peat, which formed in poorly drained alluvial material along streams and drainage ways. The marsh sediment in the tidal areas consists of salty clay loam developed in wet, marshy land along lower reaches of streams and Chesapeake Bay estuaries (Advanced Sciences, Inc. 1990). The

soil types located within MRICD's 20-acre active campus at APG-EA include Beltsville silt loam (BeB); Mattapex-Udorthents-Urban land complex (MU); Udorthents (Ud); and Urban land -Udorthents complex (Ur).

4.1.1.3 Prime and Unique Farmland

Prime farmland, as defined by the USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Although NRCS identifies soil map units on APG that may be considered prime farmland due to the physical and chemical properties of the soil, it is located within the bounds of an active military installation and is excluded under the exceptions in the USDA definition; therefore, no prime farmland is found at APG (U.S. Army Garrison APG 2022b).

4.1.1.4 Topography

Harford County is divided into two physiographic provinces. Approximately 75% of its area (the northern, western, and central portions) is located in the Upland Section of the Piedmont Plateau Physiographic Province, which consists of flat-lying lowlands with some low knobs and ridges and uplands with shallow valleys and low, rounded hills of moderate relief and altitude. The remaining 25% of Harford County (the southeastern portion) is found in the Western Shore Lowlands Region of the Coastal Plain Physiographic Province (MGS 2001, USDA SCS 1975), a flat, seaward-sloping lowland (Trapp and Horn 1997), with land dipping eastward at generally less than 1 degree (MGS 2001). The boundary between these two provinces is known as the Fall Line, since falls and rapids form where streams cross the contact between the Piedmont's consolidated rocks and the soft unconsolidated Coastal Plain sediments (Trapp and Horn 1997). The Fall Line crosses the southeastern portion of Harford County, extending from the mouth of the Susquehanna River southwestward to near the mouth of Gunpowder River (USAMRMC 2004).

Surface elevations are lower in the Atlantic Coastal Plain Physiographic Province than in the Piedmont Plateau Physiographic Province. The highest surface elevation in Harford County is about 803 feet (245 meters) above mean sea level (amsl) at Slate Ridge in Whiteford, Maryland, in the northern portion of the County and within the Piedmont Plateau (Bock 2001). Elevations in the Atlantic Coastal Plain can exceed approximately 400 feet (122 meters) near the Fall Line. The southern portion of the Coastal Plain is a broad lowland that ranges in elevation from about 90 feet (27 meters) amsl near Aberdeen to sea level near the Chesapeake Bay (USDA SCS 1975). The Gunpowder Neck peninsula, including APG-EA, lies within the Atlantic Coastal Plain Physiographic Province, characterized as generally flat with elevations rarely exceeding approximately 20 feet (6 meters) above sea level. The highest elevation there is about (50 feet) (15 meters) amsl, in the extreme northwest portion of APG-EA. Surface elevations of the land where the MRICD facilities are located vary between about 10 to 20 feet (3 to 6 meters) amsl (U.S. Geological Survey [USGS] 1985).

4.1.2 Environmental Consequences

4.1.2.1 Proposed Action

Potential adverse impacts on geological resources at MRICD due to the continuation of mission-related activities are not anticipated since all research and development activities take place indoors with stringent engineering controls. Furthermore, potential upgrades to the Non-Kinetic Threats Lab and Water Use Reduction Enhancements would only include modifications to systems within the existing buildings and would not require ground disturbances as part of new construction activities.

Short-term *de minimis* impacts to vegetative cover could result from the continuation of CCCD training and education activities at the 1-acre outdoor site to conduct CCC field training activities for the MCBC and the FCBC courses. During monthly training activities at the field site, the CCCD instructs students on the

triage and management of casualties resulting from CBRNE-related incidents. Training activities utilize various props, supplies and equipment; some items are expendable/disposable, others are not. At the conclusion of each field training event, CCCD personnel and/or participants collect all utilized supplies and equipment. Reusable items are returned to the training site's support building for proper storage. Expendable items are collected and disposed of in accordance with MRICD SOPs and Installation regulations/guidance. Current monthly activities at the field site for the MCBC and FCBC courses are not expected to change in the next ten years except for minimal fluctuations of student attendance based on multiple unknown future factors (world events, conflicts, etc.). Examples of short-term *de minimis* impacts to vegetative cover may include temporary soil compaction from foot traffic or light vehicle which would not significantly harm the overall vegetation or lead to long-term changes in the area's ecology. In addition, minor trampling of ground vegetation could also result from foot traffic during maneuvers. However, since the frequency of field training activities are limited to monthly routines, the damage would not cause significant harm to the overall vegetation composition or lead to large-scale erosion or habitat degradation. Lastly, the localized use of training proposed may press down on vegetation but can be removed quickly, allowing the plants to recover without lasting consequences. Although no vegetative or forest clearing operations are anticipated in the Proposed Action, any future work or new activities in the training area will be evaluated for environmental impacts at the minimum on a REC submitted to the Directorate of Public Works - Environmental Division (DPW-ED) for review. As a result, implementation of the Proposed Action impacts to geological resources, topography, or soils are not anticipated.

4.1.2.2 No Action Alternative

The No Action Alternative would not affect geology, topography or soils. Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data. Therefore, impacts to geological resources, topography, or soils, resulting from the No Action Alternative, are not anticipated.

4.2 Air Quality

4.2.1 Affected Environment

4.2.1.1 National Ambient Air Quality Standards and Attainment Status

USEPA Region 3 and MDE regulate air quality in Maryland. The CAA (42 U.S. Code 7401–7671q), as amended, gives the USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) acceptable concentration levels for seven criteria pollutants:

- Particulate matter less than 10 microns (PM_{10})
- Particulate matter less than 2.5 microns ($PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Ozone (O_3)
- Lead (Pb)

Short-term standards (i.e., 1-, 8-, and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (i.e., annual averages) have been established for pollutants that contribute to chronic health effects. These standards identify the maximum allowable concentrations of criteria pollutants that regulatory agencies consider safe, with an additional adequate margin of safety to

protect human health and welfare. Each state has the authority to adopt standards stricter than those established under the Federal program. MDE is responsible for maintaining air quality standards for the State of Maryland and has adopted the NAAQS.

Primary and secondary NAAQS for the aforementioned criteria pollutants are presented in **Table 4-1** for the counties where project activities are located. Areas that are equal to or less than the NAAQS ambient concentration are classified as being in attainment with the NAAQS. Areas that exceed the NAAQS ambient concentration (i.e., have poor air quality) are labeled as nonattainment areas and are designated by federal regulations. According to the severity of the pollution problem, areas exceeding the established NAAQS are categorized as marginal, moderate, serious, severe, or extreme nonattainment. Maintenance areas have recently met NAAQS but are considered to be at risk of not remaining in attainment if efforts are not continued to maintain better air quality. APG, including both Baltimore and Harford Counties, is within the Metropolitan Baltimore Intrastate Air Quality Control Region (MBIAQCR). Harford and Baltimore Counties are designated as serious nonattainment for the 2015 8-hour O_3 standard (USEPA 2023). Also, both counties were previously designated as moderate nonattainment for the 1997 $PM_{2.5}$ NAAQS, were redesignated to attainment in 2014 and now have maintenance plans in effect (USEPA 2023). The counties are in attainment for 2006 and 2012 $PM_{2.5}$ NAAQS (USEPA 2023). Additionally, APG is located within the Ozone Transport Region defined at 40 CFR §81.457(a) as consisting of 10 northeastern states (including Maryland), portions of Maine, and the Washington, D.C. Metropolitan Statistical Area, including the northern Virginia suburbs.

Table 4-1. National Ambient Air Quality Standards and Baltimore and Harford County Status

Pollutant	Standard	Averaging Time	Ambient Concentration	Baltimore County Attainment Status	Harford County Attainment Status
CO	Primary	1-hour[a] (ppm)	35	Maintenance	Maintenance
		8-hour[a] (ppm)	9		
NO_2	Primary	1-hour[b] (ppb)	100	Attainment	Attainment
	Primary and Secondary	Annual[c] (ppb)	53		
O_3	Primary and Secondary	8-hour[d](ppm)	0.070	Nonattainment	Nonattainment
SO_2	Primary	1-hour[e] (ppb)	75	Attainment	Attainment
	Secondary	3-hour[a] (ppm)	0.5		
$PM_{2.5}$	Primary and Secondary	24-hour[f] ($\mu g/m^3$)	35	Attainment	Attainment
	Primary	Annual arithmetic mean[g] ($\mu g/m^3$)	9		
	Secondary	Annual arithmetic mean[g] ($\mu g/m^3$)	15		
PM_{10}	Primary and Secondary	24-Hour[h] ($\mu g/m^3$)	150	Attainment	Attainment
Lead	Primary and Secondary	Rolling 3-month Average ($\mu g/m^3$)	0.15	Attainment	Attainment

Notes:
Source: USEPA 2023
CO = carbon monoxide; $\mu g/m^3$ = micrograms per cubic meter; NAAQS = National Ambient Air Quality Standards; NO_2 = nitrogen dioxide; O_3 = ozone; ppb = parts per billion; ppm = parts per million; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter less than 10 microns; SO_2 = sulfur dioxide
a Not to be exceeded more than once per year.
b 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
c Annual mean.
d Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
e 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
f 98th percentile, averaged over 3 years.
g Annual mean, averaged over 3 years.
h Not to be exceeded more than once per year, on average over 3 years.

APG holds two Title V operating permits: permit number 24-025-00081 for the APG-AA, which expires on January 31, 2025, and permit number 24-025-00082 for APG-EA which expires on October 31, 2024. APG conducts comprehensive annual air emission inventories for the installations. Any new activity that would be conducted at the installation requires an air permit review. The actual criteria pollutant emissions estimated for APG from year 2014 through 2018 are denoted in **Table 4-2**.

Table 4-2. Criteria Pollutant Emissions for Aberdeen Proving Ground (2014 to 2018)

Year	NO_x		Sulfur Oxides	PM_{10}	CO	VOC
	(tons per year)					
2018	82.88	4.6	3.41	68.46	9.53	
2017	63.53	4.92	3.3	68.06	3.89	
2016	92.14	6.67	3.05	54.66	4.63	
2015	117.27	16.1	2.99	54.67	4.7	
2014	58.54	15.32	2.11	34.82	2.73	

Notes:
NOx = nitrogen oxides; SOx = sulfur oxides; PM_{10} = particulate matter less than 10 microns; CO = carbon monoxide; VOC = volatile organic compound
Source: MDE 2023

4.2.1.2 Regulatory Requirements for Hazardous Air Pollutants

In addition to criteria pollutant standards, USEPA also regulates hazardous air pollutant (HAP) emissions for each state. HAPs differ from criteria pollutants for they are known or suspected to cause cancer and other diseases or have adverse environmental impacts. The National Emission Standards for Hazardous Air Pollutants (NESHAP) regulate 188 HAPs based on available control technologies. Sources of HAP emission at APG include stationary, mobile, and fugitive emissions sources. Stationary sources include boilers, incinerators, fuel storage tanks, fuel-dispensing facilities, vehicle maintenance shops, laboratories, degreasing units, and similar testing units. Mobile sources of emissions include private and government-owned vehicles. Fugitive sources include dust generated from demolition activities, open burning, detonation of munitions, and roadway traffic. APG-EA and APG-AA are minor sources of HAP because the potential emissions are below HAP major thresholds of 10 tons for a single HAP or 25 tons per year for total HAPs (MDE 2023).

4.2.1.3 Clean Air Act Conformity

State agencies (in Maryland, MDE) develop air quality plans, which are also referred to as State Implementation Plans (SIPs), designed to attain and maintain the NAAQS and to prevent significant deterioration of air quality in areas which demonstrate air that exceeds NAAQS standards. Maryland has individual SIPs for various pollutants, including NO_2, $PM_{2.5}$, 8-hour O_3, regional haze, lead, etc. Federal agencies must ensure that their actions conform to the SIP in a non-attainment area, and do not contribute to new violations of ambient air quality standards, or an increase in the frequency or severity of existing violations, or a delay in timely state and/or regional attainment standards.

The 1990 amendments to the CAA require Federal agencies to ensure that their actions conform to the SIP in a nonattainment area. The purpose of the General Conformity Rule (GCR) is to ensure that:

- federal activities do not cause or contribute to new violations of NAAQS;
- actions do not worsen existing violations of the NAAQS; and
- attainment of the NAAQS is not delayed.

USEPA has developed two distinctive sets of conformity regulations: one for transportation projects and one for non-transportation projects. Non-transportation projects are governed by general conformity regulations (40 CFR Part 93, Subpart B). This Proposed Action is a non-transportation project and pursuant to 40 CFR §93.153(b), a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or

maintenance area caused by a federal action would equal or exceed threshold emissions levels provided under 40 CFR §93.153 (b)(1) or (2).

Two levels of GCR documentation exist under a Conformity Evaluation: Applicability Analysis and a Conformity Determination. Applicability Analysis is the process of determining if the federal action must be supported by a Conformity Determination. Applicability Analysis will include a quantitative analysis of projected emissions against regulatory thresholds which trigger a Conformity Determination. The Conformity Determination is a complex assessment of air quality impacts and, if necessary, mitigation measures to ensure that a federal action conforms to the applicable implementation plan and meets the requirements of the GCR. Conformity Determination is made after an Applicability Analysis is completed and identifies if a Conformity Determination is required. The General Conformity thresholds intended to be used to perform an Applicability Analysis can also be used as a general indicator for air quality NEPA assessments when the General Conformity thresholds are compared directly to the estimated net total direct and indirect emissions from this Proposed Action.

Harford and Baltimore Counties are designated as serious nonattainment for ozone and are also located within the Ozone Transport Region. Because ozone formation is driven by other direct emissions, the air quality analyses focus on ozone precursors that include volatile organic compounds (VOCs) and NO_x. In accordance with USEPA policy, precursors that form $PM_{2.5}$ (NO_x and SO_2) have also been evaluated. For an area in serious nonattainment for the 8-hour O_3 NAAQS, the applicability criterion is 50 tons per year (tpy) for NO_x and 50 tpy for VOCs (40 CFR 93.153). For an area in maintenance for the $PM_{2.5}$ NAAQS, the applicability criterion is 100 tpy for $PM_{2.5}$, NO_x, and SO_2 (40 CFR 93.153). The applicability criterion for CO in maintenance areas is 100 tpy. Routine operation of facilities (including future planned mission activities, including building upgrades), mobile assets and equipment are exempt from the GCR in accordance with 40 CFR §93.153(c)(2)(xiii). Therefore, operational emissions from facility operations need not be included in the applicability analysis.

4.2.1.4 Asbestos Laws and Regulations

The most commonly found types of asbestos in the U.S. are chrysotile, amosite, and crocidolite. The short thin asbestos fibers released into the air are a hazard to people who inhale these fibers. There is no known safe level of exposure for persons working with asbestos or near the same area as an asbestos project; therefore, the CAA has defined NESHAP to include asbestos (a HAP pollutant with Chemical Abstracts Service No. 1332-21-4).

Under Section 112 of the CAA, the asbestos NESHAP standards can be found under 40 CFR Part 61, Subpart M, *National Emission Standard for Asbestos*. The asbestos standards have been amended several times, most comprehensively in November 1990 and again in 1995. The rule was amended to correct cross-reference citations to Occupational Safety and Health Administration (OSHA), Department of Transportation (DOT), and other USEPA rules governing asbestos. Standards for renovation activities will apply to the Proposed Action.

Asbestos work practices for demolitions and renovations of all facilities, including, but not limited to, structures, installations, and buildings are covered in the CAA. The regulations require a thorough inspection where the demolition or renovation operation will occur. The regulations also require the owner or the operator of the renovation or demolition operation to notify the appropriate delegated entity (MDE) before any demolition, or before any renovations of buildings that contain a certain threshold amount of regulated asbestos-containing material. The rule requires work practice standards that control asbestos emissions. Work practices often involve removing all asbestos-containing materials, adequately wetting all regulated asbestos-containing materials, sealing the material in leak tight containers and disposing of the asbestos-containing waste material as expediently as practicable, as the regulation explains in greater detail. On the state level, Maryland regulates how personnel work with asbestos and regulates those who train personnel to work with

asbestos. MDE requires authorized workers to carry the Maryland Photo Identification Card containing accredited credentials for personnel who perform activities with asbestos and is valid for one year following the training date. On the federal level, the USEPA regulates the asbestos abatement contractors and licenses, asbestos training providers, personnel accredited to perform asbestos work, and the asbestos in schools program.

4.2.2 Environmental Consequences

4.2.2.1 Proposed Action

Under the Proposed Action, minimal air emissions are expected to occur due to vehicular traffic and the use of fuel combustion sources during facility improvements such as the Non-Kinetic Threats Lab upgrades and Fuel Storage Compliance upgrades. Aside from facility improvements, the Proposed Action also includes training and education activities, medical research and development activities, and consultation activities. The proposed training activities include use of UTVs four times a month for a duration of one hour. The fuel combustion emissions from the UTV use are minimal. Therefore, the overall emissions of criterial pollutants from the Proposed Action are believed to be below *de minimis* levels for General Conformity.

The Proposed Action would result in short-term, localized changes to air quality as a result of fuel combustion emissions from the combustion equipment and fugitive dust generated from the vehicle traffic through the duration of the activities. The Proposed Action would comply with state, federal, and current DoD regulations designed to support compliance with CAA. Therefore, implementation of the Proposed Action would not result in significant impacts to air quality.

4.2.2.2 No Action Alternative

The No Action Alternative would not significantly impact air quality because the impacts under the No Action Alternative would be similar to those associated with the Proposed Alternative. Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data.

4.3 Noise

Noise is often defined as unwanted sound that interferes with normal activities in a way that reduces the quality of the environment. The human ear experiences sound as a result of pressure variations in the air. The physical intensity or loudness level of noise is expressed quantitatively as the sound pressure level. Sound pressure levels are defined in terms of decibels (dB), which are measured on a logarithmic scale. Sound can be quantified in terms of its amplitude (loudness) and frequency (pitch). Frequency is measured in hertz, which is the number of cycles per second. The typical human ear can hear frequencies ranging from approximately 20 hertz to 20,000 hertz. Typically, the human ear is most sensitive to sounds in the middle frequencies, where speech is found and is less sensitive to sounds in the low and high frequencies.

Since the human ear cannot perceive all pitches or frequencies equally, measured noise levels in dB will not reflect the actual human perception of the loudness of the noise. Thus, the sound measures can be adjusted or weighted to correspond to a scale appropriate for human hearing. A-weighting is used most often for high frequency sounds such as vehicle traffic ("hum" sounds). C-weighting is used for low-frequency events such as large arms and explosions ("boom" sounds). Sound levels and their associated dBA levels are listed in **Table 4-3** below.

Table 4-3. Common Sound Levels

Noise Level (dBA)	Description	Typical Sources
140	Threshold of pain	---
125	Uncomfortably loud	Automobile assembly line
120	Uncomfortably loud	Jet aircraft
100	Very loud	Diesel truck
80	Moderately loud	Motor bus
60	Moderate	Low conversation
40	Quiet	Quiet room
20	Very quiet	Leaves rustling

Source: U.S. Army Garrison APG 2017

Noise levels decrease (attenuate) with distance from the source. A generally accepted rule is that the sound level from a stationary source would drop approximately 6 dB each time the distance from the sound source is doubled. The sound level from a moving "line" source (e.g., a train or a roadway) would drop 3 dB each time the distance from the source is doubled. Noise levels may be further reduced by natural factors, such as temperature and climate, and are reduced by barriers, both manmade (e.g., sound walls) and natural (e.g., forested areas, hills) (FTA 2018).

Physical mitigation of noise is generally feasible for higher frequency sounds, such as small arms fire and traffic, whereby the low frequency component of impulsive "boom" noise has wave characteristics that can typically travel through obstacles.

4.3.1 Regulatory Overview

The Noise Control Act of 1972 (P.L. 92-574) directs Federal agencies to comply with applicable Federal, state, interstate, and local noise control regulations to the fullest extent consistent with agency missions. The act requires compliance with state or local noise control regulations in off-post areas only; however, the Army often uses the time restrictions outlined in local ordinances as general guidelines for on-post activities. In 1974, USEPA provided information suggesting that continuous and long-term noise levels in excess of 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals.

The Maryland Environmental Noise Act of 1974 established policy that states the "limitation of noise to that level which will protect the health, general welfare, and property of the people of the State." Effective October 1, 2012, MDE delegated noise enforcement authority to local governments. MDE continues to update noise control standards, but enforcement is handled by local jurisdictions. Harford County codes and regulation only regulate noise from loud music and the use of household tools.

Title 26 of the Code of Maryland Regulation (COMAR), Department of the Environment, Subtitle 02, Chapter 03 (26.02.03 Control of Noise Pollution) provides the regulatory structure for noise pollution, hazards, and control. The regulation set maximum allowable noise and vibration levels for zoning categories, as depicted in **Table 4-4**.

Table 4-4. Maximum Allowable Noise Levels (dBA)

Time	Industrial	Commercial	Residential
Day	75	67	65

Time	Industrial	Commercial	Residential
Night	75	62	55

Source: COMAR 26.02.03.02 Environmental Noise Standards

In addition, COMAR states that noise levels that emanate from construction or demolition site activities cannot exceed 90 dBA during daytime hours. Also, noise levels that extend beyond the property line of the noise source must not cause vibrations strong enough to move objects.

4.3.2 Affected Environment

4.3.2.1 Noise Management

Policies focused on the control of operational noise to protect the health and welfare of the people are outlined and defined in U.S. Army Regulation (AR) 200-1 Environmental Protection and Enhancement. In order to best prevent noise conflicts with areas surrounding military bases, the Army developed the APG Installation Compatible Use Zone (ICUZ) Plan. The ICUZ program promotes land use that is compatible with the military noise environment through communication, cooperation and collaboration between APG and the surrounding community. The ICUZ study quantifies the noise environment from military sources and recommends the most appropriate uses of noise-impacted areas (U.S. Army Garrison APG 2016).

At APG, the DPW-ED is responsible for environmental noise management. Large caliber and static detonation programs require command approval if the noise model prediction value is greater than 130 dB (Range Administration). In 2016, APG finalized and implemented the ICUZ. Through AR 200-1, noise exposure on communities is translated into Noise Zones, defined by the decibel level within those zones (U.S. Army Garrison APG 2016). The guidelines established by this regulation state that for land use planning purposes, noise-sensitive land uses range from acceptable to not compatible within the Noise Zones. The guidelines are applied throughout the ICUZ as individual, or combined military operations are analyzed. The program defines the following four Noise Zones:

- Noise Zone III – noise-sensitive land uses are not recommended or incompatible.
- Noise Zone II – Although local conditions such as availability of developable land or cost may require noise-sensitive land uses in Zone II, this type of land use is strongly discouraged on the installation and in surrounding communities. All viable alternatives should be considered to limit development in Zone II to non-sensitive activities such as industry, manufacturing, transportation, and agriculture.
- Noise Zone I – Noise-sensitive land uses are generally acceptable but military operations may still be loud enough to be heard.
- The Land Use Planning Zone (LUPZ) – The LUPZ is a subdivision of Zone I and noise-sensitive land uses are generally acceptable. However, communities and individuals often have different views regarding what level of noise is acceptable or desirable. To address this, some local governments have implemented land use planning measures beyond the Zone II limits. Additionally, implementing planning controls within the LUPZ can develop a buffer to avert future noise conflicts. (U.S. Army Garrison APG 2016).

Table 4-5 presents the noise level categories associated with the above-mentioned Noise Zones (U.S. Army Garrison APG 2016).

Table 4-5. Noise Limits for Military Noise Zones

Noise Zone	Noise Zone Description	Noise Limits		
		Small Arms (dBP)	Aviation (ADNL)	Large Arms, Demolitions, Etc. (CDNL)
LUPZ	Generally Compatible	N/A	60-65	57-62
Noise Zone I	Generally Compatible	<87	<65	<62
Noise Zone II	Generally Not Compatible	87-104	65-75	62-70
Noise Zone III	Not Compatible	>104	>75	>70

Notes:
Source: U.S. Army Garrison APG 2016; ADNL = A-weighted day-night levels; CDNL = C-weighted day-night levels; dB = decibel; dBP = decibel peak; N/A = not applicable; LUPZ = Land Use Planning Zone

Land use activities within Noise Zone I are acceptable for residential housing and medical and school facilities. Areas designated as Noise Zone I do not guarantee that training noise will not be heard in these areas, or that complaints about noise may be generated. Within Noise Zone II exposure to noise is considered significant and recommends limiting land use activities to industrial, manufacturing, transportation, and resource production. If used for other purposes, noise level reduction features are recommended for incorporation into the design and demolition of buildings. Noise Zone III is considered severe, and noise-sensitive land use activities are not recommended. Areas designated as Noise Zone III contain APG test ranges and may be designated natural open space (U.S. Army Garrison APG 2022b). There are often existing "noise-sensitive" land uses defined as non-conforming within a Noise Zone. In most cases, this is not a risk to community quality of life or mission sustainment. Average noise levels may be the best tool for long-term land use planning, but they may not adequately assess the probability of community noise complaints. As recommended in AR 200-1, the ICUZ assessment includes supplemental metrics to identify where noise from aviation overflights, demolition activity, and medium/large caliber weapons may periodically reach levels high enough to generate complaints (U.S. Army Garrison APG 2016).

APG has noise receptors located both inside and outside the installation within the various noise contours. Noise receptors that are deemed sensitive are adjacent to communities that include single family residences, Edgewood High School, Edgewood Middle School, and Deerfield Elementary school. Within the boundaries of APG, sensitive noise receptors include installation facilities and service areas. Individuals on APG may be subjected to multiple sources of continuous, intermittent, or impulsive noise during the day. Noise at APG may originate from blast noise, aircraft noise, test vehicle noise, small arms firing, road construction and maintenance, construction projects, and regular vehicular traffic noise. Most of these noise sources are confined to the Installation with the exception of blast noise and aircraft noise during over-flights.

4.3.2.2 Stationary Noise Sources

Stationary sources of noise originate from weapons testing, explosives demolition, and limited small-unit training (U.S. Army Garrison APG 2022b). Large caliber firings and static detonations of 10 pounds or more are conducted on weekdays between the hours of 8:30 AM and 10:00 PM and Saturdays 09:00 AM and 4:00 PM. A noise deviation must be granted for these activities to take place at other times. Large caliber weapons firing and explosives can be heard off the Installation. Blast noise can be heard by residents across the Chesapeake Bay and cause complaints related to the noise itself and vibration of the residences.

Weather conditions can vary the level and directionality of noise levels, and APG employs best management practices to avoid conducting high-noise-producing operations when weather conditions can amplify or send noise toward sensitive receptor areas (U.S. Army Garrison APG 2022b). Additionally, within MRICD, several high noise areas (greater than 85 dB) have been identified including the use of lab vacuums, operation of the low-pressure steam pressure regulator, the chiller room, the generator room, and demarcated adjacent area to the generator room. There are also existing areas within the animal vivarium that are high noise areas during some operations including corridors when animal caging is shuttled between the vivarium and cage wash areas, the cage wash area when cage washers are in operation, and the bedding disposal area when the bedding disposal system is in operation.

4.3.2.3 Construction Noise

Construction noise levels at APG are generated from site preparation, demolition, renovation, infrastructure construction, and repair activities. Noise levels generated can fluctuate depending on the type, number, and duration of use of heavy equipment for construction activities and can differ in affect by the type of activity, distance to noise sensitive uses, existing site conditions (vegetation to buffer sound) and ambient noise levels at those uses (U.S. Army Garrison APG 2022b).

4.3.3 Environmental Consequences

4.3.3.1 Proposed Action

The Proposed Action would be considered to have a significant effect to noise impacts if:

- It would raise the ambient noise level to such a state that it would be seriously incompatible with adjacent noise receptors; and
- It would substantially increase the number of people disturbed by the heightened noise levels on APG and off-post areas.

Under the Proposed Action short-term, minor, negative effects are expected to occur throughout construction activities associated with facility improvements such as the Non-Kinetic Threats Lab upgrades and Fuel Storage Compliance upgrades. Noise due to construction activities will vary depending on the construction method, the types of construction equipment employed, the amount of each type of construction equipment, and the duration of construction equipment use. Heavy equipment produces the greatest amount of noise disturbances and should be of special concern. Noise levels under the Proposed Action are expected to be consistent with operations at a military post and are not expected to exceed the threshold limit values outlined in APG's ICUZ. Most of the facility improvements and renovations would be indoors and as such, would not impact outdoor/offsite receptors. Delivery trucks and heavy machinery at the facility improvement sites would generate noise that could affect personnel sensitive noise areas; however, the impact would be short-term, temporary, and localized. If the proposed construction sites are within 800 feet of a noise sensitive receptor, mitigation efforts could include limiting the Proposed Action activities to weekday business hours to minimize off-post noise.

Aside from facility improvements, the Proposed Action also includes training and education activities, medical research and development activities, and consultation activities. These activities would not increase ambient noise levels, and as such would have no impact on personnel sensitive noise areas.

No additional noise evaluation would be required under NEPA, as no project activities are proposed within 800 feet of the installation boundary for more than one year, and no explosive activities are proposed.

4.3.3.2 No Action Alternative

The impacts anticipated to result from the execution of the No Action Alternative would be similar to those

described to result from the Proposed Action, because MRICD mission requirements would continue under the No Action Alternative, but the process by which the potential for impacts would be evaluated would change.

4.4 Water Resources

4.4.1 Affected Environment

4.4.1.1 Surface Water

The surface waters at APG consist of rivers, estuarine and freshwater creeks, estuarine and freshwater marshes, freshwater ponds, and ephemeral ponds. Surface waters on APG tend to be shallow and sluggish, with tidal estuaries forming the mouths of the waterways and marshes bordering their lengths. Surface drainage at APG discharges to unnamed creeks that discharge to the Gunpowder and Bush Rivers, and ultimately to the Chesapeake Bay (Whitman, Requardt & Associates [WRA] 2013).

The upper Chesapeake Bay, including APG, has a drainage basin comprising approximately 27,500 square miles. The average depth of the Chesapeake Bay is 15 feet in the vicinity of APG. The average depth of estuarine waters at APG is approximately 7 feet mean low tide and rarely exceeds 15 feet (U.S. Army Garrison APG 2021a). Due to APG's proximity to the Chesapeake Bay, surface waters located throughout the installation are generally characterized by tidal estuaries at the mouths of the waterways and brackish marshes bordering the shorelines. Salinity varies in tidal waters along the APG Chesapeake Bay shoreline, with highest average annual salinities occurring at the southern end of APG and least average annual average salinities occurring at the north end of APG. Highest annual salinities occur in the autumn season. Fall surface water salinities along the north side of Spesutie Island average less than 0.5 parts per thousand, with comparable low salinities also occurring in the upper tidal reaches of streams in APG. Conversely, surface water salinities in the vicinity of Carroll Island and APG-EA reach an average annual maximum of up to about 5 parts per thousand (Chesapeake Bay Program 2017).

APG-EA is located on the Gunpowder Neck peninsula adjacent to the upper reach of the Chesapeake Bay. Gunpowder Neck is bounded to the west by the Gunpowder River, to the east by Bush River, and to the south by the Chesapeake Bay. Surface runoff drains toward these surface water bodies or into smaller creeks that discharge into one of them. The smaller creeks draining in APG-EA include Canal Creek, Kings Creek, Lauderick Creek, Swaderick Creek, Coopers Creek, Watson Creek, Boone Creek, Wright Creek, Monk's Creek, and Reardon Inlet (USGS 1985). The Gunpowder River and Bush River watersheds are the two major watersheds in the Gunpowder Neck peninsula. MRICD's 20-acre active campus lies within the Bush River Watershed and is bounded to the east by Kings Creek which drains into the Bush River (MDE Surf Your Watershed 2001).

4.4.1.2 Groundwater

The predominant water-bearing formation in the APG region of the Atlantic Coastal Plain Physiographic Province is the Patuxent Formation. A second formation, the Patapsco Formation, is also present and contains beds of sand and gravels that often yield a high volume of water. The groundwater flows primarily in the southeast direction, toward the Chesapeake Bay (U.S. Army Materiel Command [USAMC] 2014).

Groundwater in the Atlantic Coastal Plain Physiographic Province occurs primarily within sand and gravel layers confined between layers of silt and clay. Rain percolates through the soil zone until it reaches water table aquifers (unconfined aquifers). From there it flows slowly eastward until it discharges to surface features or to deeper, confined aquifer systems. Generally, most groundwater in the crystalline rock of the Maryland Piedmont is contained in the saprolite; there is very little storage capacity in the rocks themselves. Groundwater in bedrock occurs in fluid-filled fractures in the rock, including joints and faults. These

features may be subsequently expanded through weathering of the bedrock. Joints and fractures are recharged by water from the overlying saprolite (Nutter and Otton 1969).

APG-EA has a shallow water table that is frequently within 1.6 to 3.3 feet below the soil surface. The maximum depth to which the water table may be found is 32.8 feet below ground surface. Numerous shallow ponds occur where the water table is at the soil surface. The groundwater gradient is essentially low. Groundwater flow within the subsurface usually ranges between 0.7 to 6.6 feet per year. Groundwater sources originate from the recharge of precipitation or infiltration of surface water sources (USAMRMC 2004).

Groundwater on APG is monitored by 300 non-potable groundwater monitoring wells at various environmental investigation/remediation sites across the installation. In areas of APG formerly used for the production and disposal of chemical compounds, including APG-EA, groundwater from the wells has concentrations of inorganic and organic substances exceeding the USEPA Safe Drinking Water Standards U.S. Army Medical Research and Development Command [USAMRDC] 1992). APG's Installation Action Plan (IAP) outlines a multi-year cleanup program for the installation and identifies environmental cleanup requirements for the areas of concern (U.S. Army Corps of Engineers [USACE] 2014).

4.4.1.3 Floodplains

EO 11988 directs Federal agencies to avoid floodplains unless the agency determines there is no practical alternative to undertaking the action in a floodplain. If building in a floodplain is the only practical alternative, an eight-step process, detailed in the Federal Emergency Management Agency document Further Advice on EO 11988 Floodplain Management, dated 1987, should be followed.

Most of the land surface within APG lies within the 100-year floodplain due to the generally flat topography. The 1% annual chance floodplain is vulnerable to riverine and or coastal (tidal) flooding that would be expected to occur on average about once every 100 years (WRA 2013). A USACE study conducted in 1983 characterized floodplains as land with elevations less than approximately 8 feet amsl (USAMRDC 1992). APG-EA has 71 sites that are within the 100-year flood zone (USACE 2000). While most of the MRICD property is situated upland, outside the 500-year flood zone, portions along the eastern boundary lie in the 100 and 500-year flood zone. More specifically, sections of the access road to the 1-acre field training site adjacent to Building E3083 lie within the 100-year and 500-year flood zones. Any future road maintenance or improvement activities by the DPW-ED to the access road will need to be evaluated for potential impacts. The MRICD building is located approximately 800 feet of the 500-year flood zone and 900 feet from the 100-year flood zones located on the eastern boundary, respectively. Furthermore, the lowest elevation of the MRICD building lies at approximately 10 feet amsl (USAMRDC 1992; USGS 1985).

4.4.1.4 Wetlands

Wetlands are jointly defined by USEPA and USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include "swamps, marshes, bogs and similar areas" (40 CFR Part 230.3(o)(3)(iv), *Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material,* and 33 CFR 328.3(c)(4), *Definition of Waters of the U.S.*). USACE regulates the discharge of dredged or fill material in waters of the U.S., including jurisdictional wetlands pursuant to Section 404 of the CWA. Section 404 of the CWA requires federal regulation for most activities that impact wetlands. The Section 404 requirements support the goal of no net loss of wetlands (U.S Army Garrison APG 2019).

The goal of Maryland's Non-tidal Wetlands Act (1991) is no overall net loss of non-tidal wetland acreage and function. A permit is required for any activity that alters a non-tidal wetland or its 25-foot buffer. The 25-

foot buffer is expanded to 100 feet for wetlands of special state concern as defined and designated in COMAR 26.23.06, *Nontidal Wetlands of Special State Concern*. No wetlands of special state concern are located at APG.

EO 11990, requires Federal agencies take action to minimize the destruction, loss or degradation of wetlands. The order further requires federal agencies to ensure that there are no practicable alternatives to such construction and that the Proposed Action includes all practical measures to minimize harm to wetlands which may result from such use. In making this determination agencies may take into account economic, environmental, and other pertinent factors (USACE 2014).

According to APG's Integrated Natural Resources Management Plan (INRMP), updated November 2021, 18% (approximately 12,695 acres) of APG's land is identified as tidal and non-tidal wetlands. This was determined using the USFWS National Wetland Inventory (NWI). The NWI relies on trained image analysts to identify and classify wetlands and deepwater habitats from aerial imagery. This method is suitable for general planning purposes; however, detailed field delineation of wetlands would be necessary for future development (U.S Army Garrison APG 2019).

Wetlands are classified by the NWI into five systems (marine, estuarine, riverine, lacustrine, and palustrine), then further separated into subsystems (subtidal, intertidal, etc.) based on water inundation, and vegetative classes (aquatic bed, emergent, scrub-shrub, forested, etc.). APG has a mix of wetlands transitioning from tidal marshes along the shorelines of the Chesapeake Bay, Bush River, and Gunpowder River to non-tidal wetlands scattered throughout the installation as natural depressions, ordnance testing craters, and poorly drained soils. Estuarine emergent wetlands and non-tidal palustrine forested wetlands are the dominant wetlands at APG. Wetland boundaries change due to changing hydrology brought on by natural succession, beaver activity, and human-induced activities. Broad estimations of wetland boundaries can also change due to evolving technologies, such as improved infrared aerial photography (U.S Army Garrison APG 2021a).

There are about 2,625 acres of wetlands in the APG-EA (USACE 2000). The predominant marshes in APG-EA consist of coastal, freshwater marshes, which are affected by tidal action (Chemical Research, Development, and Engineering Center 1988). The two closest wetland types to MRICD's 20-acre active campus are Estuarine and Marine Wetland, and Freshwater Forested/Shrub Wetland, according to NWI. Two MRICD buildings are within approximately 500 feet of the edges of their respective closest wetlands (USAMRDC 1992). Numerous other wetlands are present within several miles of the MRICD facilities (USFWS 1982). While the 1-acre field training site adjacent to Building E3083 is not located within the identified wetland areas, sections of the access road that lead to the training facilities are located near wetland areas. Any future road maintenance or improvement activities by the DPW-ED to the access road will need to be evaluated for potential impacts.

4.4.1.5 Water Quality Certification

CWA Section 401 water quality certifications provide the opportunity to address aquatic resource impacts of federally issued permits and licenses, in order to help protect water quality within the state. Under Section 401 of the CWA, states have the authority to review any Federal permit or license that may result in a discharge to wetlands and other waters under state jurisdiction, in order to ensure that the actions would be consistent with the state's water quality requirements. The MDE is responsible for issuing water quality certifications for proposed discharges to jurisdictional wetlands and waters of the State of Maryland and can deny, approve, or approve with conditions water quality certifications. A water quality certification must be issued for all USACE Section 404 permits (USEPA 2019).

To address major issues facing the Chesapeake Bay, the Army has initiated the Army Chesapeake Bay Strategy. This strategy will address issues related to nutrient and sediment pollution, toxic chemical contaminants, and habitat. In addition, the Chesapeake Bay Total Maximum Daily Load was established in

2010 to reduce the amount of nitrogen, phosphorus, and suspended solids in the Chesapeake Bay. The Army plans to reduce the levels of these pollutants to meet the Total Maximum Daily Load requirements through implementation of stormwater best management practices and pollution prevention (P2) activities, such as street sweeping (U.S. Army Garrison APG 2017). Furthermore, the DPW-ED will review any planned maintenance activities located in or around flood zones and wetland areas to identify potential impacts and what mitigation is required to address those impacts, such as a water quality certificate.

4.4.2 Environmental Consequences

4.4.2.1 Proposed Action

It is not anticipated that continuation of the mission-related activities under the Proposed Action would either directly or indirectly impact water resources, including surface water and groundwater. Impacts to water resources would be considered significant if Army actions exceed applicable federal and state regulatory limits for surface water quality or result in unpermitted direct impacts to waters of the U.S.; substantially affect surface water drainage or stormwater runoff; substantially affect groundwater quantity or quality; and/or are inconsistent with enforceable policies under the Maryland's CZMA. As part of the execution of the Proposed Action, water resources would be utilized in the way they have been historically and are currently utilized for execution of the same activities associated with the continuation of the existing program. Therefore, no impacts to water resources are anticipated to result from implementation of the Proposed Action.

4.4.2.2 No Action Alternative

The No Action Alternative would not impact water resources including surface water, groundwater, wetlands, and floodplains. Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data. Therefore, no impacts to water resources are anticipated to result from implementation of the No Action Alternative.

4.5 Coastal Zone Management

Maryland's coastal zone extends from the inland boundaries of the 16 counties and the City of Baltimore that border the Atlantic Ocean, Chesapeake Bay, and Potomac River, to the District of Columbia. It extends seaward to a distance of three miles into the Atlantic Ocean. The entirety of the APG installation lies within Maryland's coastal zone.

As required by the federal CZMA of 1972, Maryland established its Coastal Zone Management Program (CZMP), which was approved in 1978. Maryland's CZMP was established to protect the state's coastal zone through a network of state laws and policies. The CZMA requires that federal actions likely to affect any land or water use or natural resource within the coastal zone must be enacted to the maximum extent practicable with the state's CZMP. These actions must also go through a federal consistency review (USACE 2014).

4.5.1 Affected Environment

4.5.1.1 Federal Consistency

Federal consistency refers to the review process mandated by Section 307 of the CZMA. This process includes submission of a consistency determination and supporting materials by the federal proponent to the state. In Maryland, this process is carried out by the Coastal Zone Consistency Division of the Wetlands and Waterways Program of the Water Management Administration within MDE. Although the Water

Management Administration is responsible for the official consistency decision, other agencies within the CZMP network will also often provide findings that are considered in the decision (EA Engineering 2014).

APG, including the APG-EA, is situated entirely within Maryland's CZMP area, which includes the Chesapeake Bay. Federal agencies are required to determine whether their activities are reasonably likely to affect any coastal use or resource and to conduct such activities in a manner consistent to the maximum extent practicable with the goals and objectives of Maryland's CZMP.

A list and description of the specific enforceable policies for Federal Consistency determination for the State of Maryland can be seen in Article II of the Memorandum of Agreement between Maryland and the DoD. Please see **Appendix B** for a full list of these policies and a description of the actions that would be taken for compliance with the Maryland CZMA enforceable policies.

4.5.1.2 Chesapeake Bay Critical Area

Maryland's federally approved CZMP incorporates implementation of the Maryland Chesapeake Bay Critical Area Act. In 1984, the Maryland General Assembly passed the Chesapeake Bay Critical Area Protection Act to help protect the Chesapeake Bay's environment. It also created a statewide Critical Area Commission to oversee development and implementation of local land use programs directed toward the Critical Area. The land immediately surrounding the Chesapeake Bay and its tributaries has the greatest potential to affect its water quality and wildlife habitat; therefore, all lands within 1,000 feet of the tidal waters' edge or from the landward edge of adjacent tidal wetlands and the lands under them are designated as the Chesapeake Bay "Critical Area" (U.S. Army Garrison APG 2019).

Harford County is included in the Maryland CZMP, meaning that all federal agencies proposing activities within the county are to comply with the Maryland Coastal Zone Management Program Enforceable Policies. Local political entities administer and enforce locally adopted standards for protection of the Maryland defined Critical Area. APG is a federal property and is not required to abide by these local regulations (USACE 2014). Since the 1-acre field training site is located is located within 1,000 feet of the Chesapeake Bay's "Critical Area", any maintenance activities associated with the site will need to be reviewed in accordance with Maryland's CZMP for consistency. Therefore, the DPW-ED will need to review maintenance activities, including vegetation management, within the 1-acre field training site and submit a consistency determination for compliance with the Maryland Coastal Zone Management Program Enforceable Policies.

The Maryland Critical Area Commission does not permit new development activities within a 100-foot buffer of natural vegetation established landward from the mean high-water line of tidal waters, tributary streams, and tidal wetlands, except those necessarily associated with water-dependent facilities.

4.5.2 Environmental Consequences

4.5.2.1 Proposed Action

The Proposed Action would be subject to compliance with the CZMA per the Memorandum of Agreement between the State of Maryland and the DoD for the protection of Maryland's coastal resources. It is not anticipated that continuation of the mission-related activities, within the building and at the outdoor training site, under the Proposed Action would impact coastal resources. Therefore, no effects to Maryland's coastal zone are anticipated to occur as a result of the implementation of the Proposed Action.

4.5.2.2 No Action Alternative

Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for

each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data. The No Action Alternative would not modify topography, drainage or other site features that could impact coastal resources. Therefore, no impacts to the CZMA are anticipated to occur as a result of the implementation of the No Action Alternative.

4.6 Biological Resources

Biological resources include native or naturalized plants and animals, as well as federally protected species and the habitats in which they live. Protected biological resources include plants and animal species listed by the State of Maryland, or by the USFWS, or NOAA Fisheries as rare, threatened, or endangered. Special concern species are not afforded the same level of protection as the protected species, but their presence is taken into consideration by resource agency biologists involved in reviewing projects and permit applications (USACE 2014).

4.6.1 Affected Environment

4.6.1.1 Vegetation

Vegetative cover at APG consists of forest land, open land/meadow, and developed areas with maintained turf, and street trees. Approximately 35% of the total APG acreage is comprised of upland areas. Upland areas are dominated by forest vegetation, but also include maintained lawn/landscaped areas, fields, and developed areas (buildings and roads). The plants of APG are generally those typical of the Atlantic Coastal Plain Physiographic Province. Major plant community types on the land areas of APG include mixed deciduous forests, wetlands, meadows, and a variety of developed areas. A number of species are near the northern edge of their ranges. The variety of habitats on APG supports a variety of plants. Vegetation around most buildings at APG is "maintained habitat" in the form of lawn, primarily grass. A listing of vegetative species known to occur on APG is provided in Appendix B of the INRMP (U.S. Army Garrison APG 2021a).

Though most (as much as 90%) of APG lands were farmland prior to military use, forests now cover approximately 15,862 acres of the land area at APG (USAMC 2014). Hardwood trees comprise most of the wooded areas at APG (USAMRDC 1992). The predominant types of trees at APG consist of sweet gum, water oak forest, mixed oak, yellow poplar/transition hardwood, and to a lesser extent, pioneer-type trees (Advanced Sciences, Inc. 1990). The majority of the forested areas also may be classified as wetlands, since the soils are waterlogged due to the high water table. Little virgin woodland remains at APG (Chemical Research, Development, and Engineering Center 1988). There are approximately 3,655 acres classified as forested lands at APG-EA and approximately 1,154 acres of lawn/landscaped areas, 553 acres of building/roads, and 131 acres of bare soil (USACE 2000). The majority of the MRICD 20-acre active campus consists of developed areas with buildings and roads, and lawn/landscaped areas including the 1-acre field training site. There is a small, sparsely forested area alongside Kings Creek to the eastern boundary of the study area.

Forests on APG are largely discontinuous and fragmented by numerous watercourses, wetlands, open fields, development, and roads. Stands vary in size from less than 1 acre to several hundred acres. Natural forest regeneration is occurring, often with an initial population of pioneers of sweetgum or red maple establishing early, then gradually oak, hickory, and other hardwoods dominating as the forest matures. Species diversity is limited by heavy deer browsing (U.S. Army Garrison APG 2019). As a result of military research and testing operations at APG, many of the forest areas within the installation may have been contaminated with chemicals and radioactive materials and exposed to repeat burning. These wooded areas were harvested selectively during the 1970s and 1980s (USACE 2015). Occasional forest fires occur under natural conditions, but forest fires are often prevented in close proximity to developed areas. Repeated burning at

military installations often serves to maintain forests in a more natural character than would otherwise be the case in areas where burning is restricted.

APG protects forested areas to the maximum extent practical in accordance with the Forest Conservation Act (1991) while continuing to sustain and support current and future missions. APG manages its forest conservation program in accordance with the Maryland Department of Natural Resources. In keeping with the Forest Conservation Act standards, mitigation for forest disturbances is determined by the Forest Conservation Plan and ratios in the Maryland defined Critical and non-Critical Area (USACE 2014).

Multiple invasive plant species occur on the installation. Common reed (*Phragmites australis*), a perennial grass associated with wetlands, is widespread on APG. While both native and exotic varieties of common reed occur, once the exotic variety colonizes a disturbed area, it takes over rapidly. Purple loosestrife (*Lythrum salicaria*) is an emergent aquatic plant of Eurasian origin that is also present on APG. Other significant invasive plant species at APG include Japanese stiltgrass (*Microstegium vimineum*) which is a major forest understory invasive; the woody vine Japanese honeysuckle (*Lonicera japonica*); and shrub species like multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), and Japanese barberry (*Berberis thunbergii*) (U.S. Army Garrison APG 2019).

4.6.1.2 Submerged Aquatic Vegetation

Submerged aquatic vegetation (SAV) are rooted aquatic plants found in shallow water areas of tidal and nontidal waters. The Virginia Institute of Marine Sciences (VIMS) conducts annual aerial surveys to photograph and map SAV in the Chesapeake Bay. APG supports these efforts with ground surveys used in conjunction with the photographic interpretation. SAV beds have been mapped since the 1980s in the Bush River, Gunpowder River, Spesutie Island, and elsewhere in close proximity to the APG shoreline. The dominant species of SAV in the APG area include native species: wild celery (*Vallisneria americana*), water stargrass (*Heteranthera dubia)*, coontail *(Ceratophyllum demersum),* and Redhead Grass *(Potamogeton perfoliatus)* (USACE 2014). Invasive exotic SAV species occurring in APG waters include hydrilla (*Hydrilla verticillata*) and Eurasian watermilfoil (*Myriophyllum spicatum*) (U.S. Army Garrison APG 2019). Although these outcompete native SAV species in many cases, these SAV species are still considered to provide valuable habitat in tidal waters.

SAV coverage declined drastically in the 1960s in accompaniment with water quality declines driven by nutrient loading and loss of oysters from disease and overharvesting. The decline of SAV is commonly identified as one of the principal ecological issues facing the Chesapeake Bay (USACE 2015). However, in recent years, SAV has undergone a major resurgence, increasing to its greatest level ever scientifically recorded in 2017. Furthermore, SAV increased 8% relative to 2022 in regions mapped for both years (VIMS 2023).

4.6.1.3 Fish and Wildlife Resources

The waters and lands of APG support fish and wildlife of ecological and economic importance. Blue crabs (*Callinectes sapidus*) inhabit APG waters during their juvenile stages and parts of their adult stages. The waters of APG support at least 27 species of fish, including resident estuarine and freshwater species, as well as migratory species. Anadromous fish are those migratory fish that spawn in freshwater but live most of their lives in salt water. Anadromous and semi-anadromous species that occur include American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), striped bass (*Morone saxatilis*), and white perch (*Morone americana*). Catadromous species migrate from freshwater to saltwater to spawn. One catadromous species, the American eel (*Anguilla rostrata*), can be found in APG waters. Resident freshwater fish species found at APG include: largemouth bass (*Micropterus salmoides*), pumpkinseed (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*), yellow perch (*Perca flavescens*), brown bullhead (*Ameiurus nebulosus*), channel catfish

(*Ictalurus punctatus*), white catfish (*Ameiurus catus*), and carp (*Cyprinus carpio*) (U.S. Army Garrison APG 2019).

There are over 40 species of amphibians and reptiles on APG property. Most of these species inhabit the forests, wetlands, ponds, and streams. Common amphibians present include: the bullfrog (*Lithobates catesbeianus*), green frog (*Lithobates clamitans*), Northern spring peeper (*Pseudacris crucifer*), Southern leopard frog (*Lithobates sphenocephalus*), Fowler's toad (*Anaxyrus fowleri*), and the red-backed salamander (*Plethodon cinereus*). The most common reptile species include the Eastern box turtle (*Terrapene carolina carolina*) and Eastern garter snake (*Thamnophis sirtalis*) (U.S. Army Garrison APG 2019).

Due to its diverse habitat, large expanses of undeveloped land, and location, APG is important to many bird groups, including waterfowl, raptors, and neotropical migrants. It is also home to a number of Forest Interior Dwelling Species (USACE 2014). Forest Interior Dwelling Species require large forest areas to breed successfully and maintain viable populations. This diverse group includes songbirds such as tanagers and warblers, as well as residents and short-distance migrants such as woodpeckers, hawks, and owls (U.S. Army Garrison APG 2019). Approximately 250 species of birds may occur at APG throughout the year, including 108 species of non-migratory or waterfowl bird species. The installation also provides breeding, foraging, and wintering habitat for many of the 29 species of waterfowl that use the Chesapeake Bay, including mallards (*Anas platyrhynchos*), black ducks (*Anas rubripes*), wood ducks (*Aix sponsa*), blue-winged teals (*Anas discors*), hooded mergansers (*Lophodytes cucullatus*), and Canada geese (*Branta canadensis*). Colonial waterbirds can be found seasonally at APG; they include: the great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), common egret (*Ardea alba*), green heron (*Butorides virescens*), and the black-crowned night heron (*Nycticorax nycticorax*). There are several great blue heron rookeries. APG is located on the upper Chesapeake Bay and Atlantic Flyway, which is a major bird migratory route (U.S. Army Garrison APG 2021a).

Twenty-four mammal species have been recorded as living on APG including the red fox (*Vulpes vulpes*), white-tailed deer (*Odocoileus virginianus*), eastern cottontail rabbit (*Sylvilagus flordianus*), muskrat (*Ondatra zibethicus*), gray squirrel (*Sciurus carolinensis*), striped skunk (*Mephitis mephitis*), groundhog (*Marmota monax*), and beaver (*Castor canadensis*) (U.S. Army Garrison APG 2019).

In some cases, wildlife species occur in large numbers and/or cause landscape impacts that are a management concern. Beavers are a management challenge especially along Romney Creek in the APG-AA where they frequently build dams, flooding low-lying areas including some portions of the perimeter fence. Excess deer browse threatens forest regeneration and thus future forest health in many areas. Deer vehicle collisions are a concern at APG. Deer movement can be limited by fences, and thus fences can be important features controlling magnitude of deer browse effects on native vegetation (U.S. Army Garrison APG 2019).

4.6.1.4 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA) of 1918. The bald eagle is no longer listed under the ESA, so no critical habitat is designated for the species.

The Chesapeake Bay has several concentration areas for bald eagles. APG is located in the Upper Chesapeake Bay bald eagle concentration area. APG shorelines provide optimal habitat for foraging, roosting, and nesting bald eagles. Bald eagles typically like to nest in large trees with a clear view of shoreline foraging areas, or if nesting inland, within one mile of suitable foraging areas. They also typically use the same nesting territories year after year. All tidal waters within APG provide potential foraging habitats for bald eagles. They are mostly isolated from human disturbance, have an abundant supply of prey – both fish and waterfowl, and contain suitable trees for perching along the shoreline. In late spring and

early summer, post-nesting and sub-adult eagles migrate north from Florida and other southeastern states to spend the summer months in the Chesapeake Bay area, while eagles from northeastern Canada and the U.S. migrate to the area during late fall and early winter. APG is often a site with the highest summer and winter eagle populations in the upper Chesapeake Bay (U.S. Army Garrison APG 2019).

Non-breeding eagles are typically gregarious and establish communal roosts (areas where eagles gather and perch overnight). Communal roosts are typically positioned near major foraging areas (large bodies of water), isolated from human disturbance, contain sustainable substrate for roosting, positioned in areas protected from harsh weather, and have a clear movement corridor between the roost and primary foraging areas. Communal roosts at APG have been documented along several creeks including Woodcrest Creek, Mosquito Creek, Romney Creek, and Coopers Creek. Many areas on the installation contain suitable communal roosting habitat (USACE 2014).

APG's INRMP (U.S. Army Garrison APG 2021a) includes avoidance, minimization, and mitigation measures to avoid or reduce impacts to bald eagles. These measures include exclusion zones (buffers) for habitat protection and adaptive management strategies to address allowable activities in proximity of eagle nests, roosts, and foraging areas.

4.6.1.5 Rare, Threatened, and Endangered Species

Under the ESA, an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The ESA also provides for recovery plans to be developed describing the steps needed to restore a species population. The ESA requires APG to protect any endangered or threatened species found on its property, and APG must consult with USFWS on any action that may affect endangered or threatened species or that may adversely impact critical habitat.

Critical habitats, as defined by the ESA, are areas with physical or biological features essential to the preservation of a species that may require special management or protection. Federal agencies are required to take precautions to not destroy or harm areas designated as critical habitat. The following considerations are made when determining critical habitat for a species: space for individual and population growth and normal behavior; cover or shelter; food, water, air, light, minerals, or other nutritional or physiological requirements; sites for breeding and rearing offspring; and habitats that are protected from disturbances or are representative of the historic geographical and ecological distributions of a species (USACE 2014).

A review of the USFWS Information for Planning and Consultation (IPaC) online tool identified the northern long-eared bat (NLEB) (*Myotis septentrionalis*), which is listed as federally endangered and state threatened, along with the monarch butterfly (*Danaus plexippus*) within the study area. However, the USFWS IPaC tool indicated that the NLEB species only needs to be evaluated for projects that will clear 15 acres or more of trees. For the purposes of this document, it is assumed that less than 15 acres of trees would be cleared as a result of the Proposed Action; therefore, the NLEB has not been evaluated for potential impacts from the Proposed Action (USFWS 2024). A list of federal and state listed rare, threatened, and endangered species that occur or have the potential to occur at MRICD is provided in **Table 4-6**, below. The enclosed species list provided by USFWS is presented in **Appendix C**.

Table 4-6. Federal and State Listed Rare, Threatened, and Endangered Species that Occur or have the Potential to Occur at MRICD

Scientific Name	Common Name	Status
Mammals		
Myotis septentrionalis*	Northern Long-Eared Bat	FE

Scientific Name	Common Name	Status
		ST
Insects		
Danaus plexippus*	Monarch Butterfly	FC

Notes:
USFWS 2024
*Species have not been documented at APG, but appropriate habitat exists.
Federal Status – Determined by the U.S. Fish and Wildlife Service
FE − Endangered – Species in danger of extinction throughout all or a significant portion of their range.
FT − Threatened – Species likely to become endangered within the foreseeable future throughout all or a significant portion of their range.
FC − Candidate – Species for which the USFWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
SE − Endangered – A species whose continued existence as is determined to be in jeopardy.
ST − Threatened – A species which appears likely to become endangered in the State.

4.6.2 Environmental Consequences

4.6.2.1 Proposed Action

Medical research and development activities conducted at MRICD include the development of chemical countermeasures such as antidote therapies, pretreatment measures, topical skin protectants, and treatments that reverse or reduce the toxicity of chemical agents for the improved management of casualties. In addition, fundamental and applied research is performed on the biochemistry, pathology, pharmacology, physiology, and toxicology of chemical agents and their medical countermeasures. Based on previous analysis performed by USAMRMC, as reported in the Programmatic EIS (2004), existing engineering controls incorporated in the research program control migration of potentially impacted specimens. All research and development activities take place indoors within stringent engineering controls (e.g., self-closing doors, sealed wall penetrations, and species-appropriate systems), and field training activities conducted in the spring and fall months do not cause any discernible land disturbance. Therefore, no impacts on plant or animal ecology resulting from the Proposed Action are anticipated.

4.6.2.2 No Action Alternative

Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data. Therefore, the No Action Alternative is not anticipated to impact biological resources.

4.7 Hazardous, Toxic and Radioactive Substances

4.7.1 Regulatory Background

A hazardous substance is defined as any substance that is 1) listed in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended; 2) designated as a biologic agent and other disease-causing agent which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations in such persons or their offspring; 3) listed by the DOT as hazardous

materials under 49 CFR 172.101, Purpose and Use of Hazardous Materials Table, and appendices; or, 4) defined as a hazardous waste per 40 CFR 261.3, Definition of Hazardous Waste, or 49 CFR 171, General Information, Regulations, and Definitions. (U.S. Army Garrison APG 2020).

OSHA's definition includes any substance or chemical which is a "health hazard" or "physical hazard," including: chemicals which are carcinogens, toxic agents, irritants, corrosives, sensitizers; agents which act on the hematopoietic system; agents which damage the lungs, skin, eyes, or mucous membranes; chemicals which are combustible, explosive, flammable, oxidizers, pyrophorics, unstable-reactive or water-reactive; and chemicals which in the course of normal handling, use, or storage may produce or release dusts, gases, fumes, vapors, mists or smoke which may have any of the previously mentioned characteristics. (Full definitions can be found at 29 CFR 1910.1200 *OSHA Hazard Communication [HAZCOM] Standard*) (U.S. Army Garrison APG 2020).

USEPA incorporates the OSHA definition and adds any item or chemical which can cause harm to people, plants, or animals when released by spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment (40 CFR 355, *Emergency Planning and Notification*) (U.S. Army Garrison APG 2020).

DOT defines a hazardous material as any item or chemical which, when being transported or moved in commerce, is a risk to public safety or the environment, and is regulated as such under its *Pipeline and Hazardous Materials Safety Administration* regulations (49 CFR 100-199), which includes the Hazardous Materials Regulations (49 CFR 171-180). In addition, hazardous materials in transport are regulated by the International Maritime Dangerous Goods Code; Dangerous Goods Regulations of the International Air Transport Association; Technical Instructions of the International Civil Aviation Organization; and U.S. Air Force Joint Manual, *Preparing Hazardous Materials for Military Air Shipments* (U.S. Army Garrison APG 2020).

The Nuclear Regulatory Commission regulates materials that are considered hazardous because they produce ionizing radiation, which means those materials that produce alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. This includes special nuclear material, by-product material, and radioactive substances (See 10 CFR 20, *Standards for Protection Against Radiation*) (U.S. Army Garrison APG 2020).

APG is subject to all requirements of the following federal, state, and ARs including:

- APG P2 Plan
- APGR 200-60, *Hazardous Waste Management*
- APGR 385-4, *APG Safety and Occupational Health Program*
- AR 40-5, *Army Public Health Program*
- AR 190-17, *Biological Select Agents and Toxins Security Program*
- AR 190-59, *Chemical Agent Security Program*
- AR 385-61, *The Army Chemical Agent Safety Program*
- AR 700-141, *Hazardous Materials Information Resource System*
- CERCLA
- DA Pamphlet 384-64, *Ammunition and Explosives Safety Standards*
- DA Pamphlet 710-7, *Hazardous Material Management Program*
- Defense Explosive Safety Regulation 6055.09
- DoD Directive 4140.25M, *Procedures for the Management of Petroleum Products*
- DoD Directive 4145.26M, *DoD Contractors' Safety Manual for Ammunition and Explosives*, 1997
- DoD Directive 4150.7, *Pest Management Program*

- DoD Directive 5030.41, *Oil and Hazardous Substances Pollution Prevention and Contingency Program*
- DoD Directive 6055.9, *DoD Explosives Safety Board and Component Explosives Safety Responsibilities*, July 29, 1996, Chapter 12, "Real Property Contaminated with Ammunition, Explosives or Chemical Agents"
- DoD Instruction 6050.05, *DoD Hazard Communication (HAZCOM) Program*
- EO 12580 (1987), *Superfund Implementation*
- Explosives "Army Specific" HQDA Letter 385-00-2
- Explosives Safety Policy for Real Property Containing Conventional Ordnance
- Federal Acquisition Regulation
- *Hazardous Waste Regulations* (40 CFR Parts 260-279 and COMAR Title 26, Subtitle 13)
- OSHA HAZCOM Standard (29 CFR 1910.1200)
- *OSHA Hazardous Waste Operations and Emergency Response Standard* (29 CFR 1910.120 and 1926.65)
- *Spill Prevention, Control, and Countermeasure Rule* (40 CFR Part 112)
- Superfund Amendments and Reauthorization Act (1986)
- Toxic Substances Control Act of 1976

Specific hazardous material guidance is also covered in Chapter 9 of AR 200-1 which establishes policies and procedures to protect the environment, including environmental responsibilities for the DA, major commands, and installations. It directs Army staff to follow applicable environmental regulations of final governing standards and Army environmental quality policies pertaining to the EPCRA (1986), Resource Conservation and Recovery Act, and CERCLA, also known as the Federal Superfund Law. It also defines the Army's goal of continually managing and reducing the generation of hazardous waste, through waste identification and disposal, records management, and training programs (U.S. Army Garrison APG 2020).

4.7.2 Affected Environment

4.7.2.1 Environmental Compliance Management Plans

APG follows the U.S. Army's Hazardous Materials Management Policy that fulfills the federal and state requirements and ARs as specified therein (U.S. Army Garrison APG 2018). The manual includes procedures for maintaining inventory data and for procuring, receiving, and tracking hazardous materials. In addition, APG policies and regulations include:

- APG - Asbestos Management Program – Asbestos Notification Form MDE-259
- APG - Lead Hazard Management Program − Lead and Waste Characterization and Disposal Plan
- APG – Spill Prevention, Control, and Countermeasure Plan (May 2024)
- APG – Universal Waste Guidance (May 2018)
- APGR 200-1, *Environmental Quality Control*
- APGR 200-7, *Source Water Protection Area Management Strategies*
- APGR 200-30, *Air Quality Management*
- APGR 200-41, *Water Quality Management*
- APGR 200-50, *Solid Waste Management Regulation*
- APGR 200-60, *Hazardous Waste Management*
- APGR 200-61, *Management of Polychlorinated Biphenyls*
- Directorate of Public Works (DPW) 01, *APG Guidance for COMAR Listing and Delisting for Chemical Agent Wastes*
- DPW 03, *Pollution Prevention Policy*
- DPW 05, *Paints and Coatings Policy*

- DPW 07, *APG Environmental Policy*
- DPW 10, *APG Policy on Coordinating Environmental Issues with Federal, State and Local Officials*
- DPW 11, *Special Medical and Related Veterinary, Toxicology/and Biotechnology Wastes Management*
- DPW 17, *APG NEPA Policy*
- APG Installation Emergency Management Plan (IEMP)
- Guidance for Proper Management of Excavated Soil

APG also maintains a Hazardous Waste Tracking System to track all generated hazardous wastes from their generation through off-site disposal (U.S. Army Garrison APG 2020).

The APG Hazardous Waste Regulation 200-60 specifies policies, assigns responsibilities, and establishes procedures for the management and disposal of hazardous waste generated at APG (U.S. Army Garrison APG 2020).

The APG Spill Prevention, Contingencies and Countermeasures Plan addresses requirements, response, organization, assessment, establishment of priorities, environmental considerations, recommended cleanup techniques, training, and preventative maintenance (U.S. Army Garrison APG 2020).

The APG P2 Plan establishes the installation's commitment to environmental leadership in P2 and outlines the concepts and practices necessary to reduce the use of hazardous materials and the release of pollutants to as near zero as is feasible (U.S. Army Garrison APG 2020).

In addition, the US Army MRICD Hazardous Materials Management Plan describes the procedures to minimize and control the use of hazardous materials at MRICD and applies to all MRICD personnel and on-site support contractors who utilize hazardous materials. The MRICD Hazardous Materials Program promotes the reduction of hazardous materials use; complies with the Hazardous Materials EPCRA annual reporting requirements; controls hazardous materials acquisition, storage, use and disposition within MRICD; and facilitates the transfer of hazardous materials information to APG first responders (MRICD 2022). The plan does not include radiological materials, which are no longer used at MRICD, nor does it address U.S. Food and Drug Administration registered drugs employed by professional research staff, or Controlled Substances whose use is strictly regulated by the U.S. Drug Enforcement Agency (MRICD 2022).

4.7.2.2 Hazardous Materials Use

Hazardous materials are utilized at APG during research, development, and testing activities. Radiological materials are no longer used at MRICD (MRICD 2022). APG's primary goal is to reduce toxic and hazardous materials and waste generation through the identification of proven substitutes and established facility management practices (e.g., P2). APG's Hazardous Materials Management Policy and Hazardous Materials Management Procedures Manual provide the baseline hazardous materials requirements for all Garrison, tenant activities, and contractors (U.S. Army Garrison APG 2020).

Reporting of hazardous chemical storage quantities and locations is required under and conducted in accordance with sections 311 through 312 of EPCRA and with section 313 of the Toxic Release Inventory. Physical and/or virtual Hazardous Material Control Programs serve as the primary point of entry for hazardous materials data, provide hazardous material inventory reporting, facilitate the sharing of excess materials among installation activities, generate reports to guide P2 activities, and maintain Safety Data Sheets. Multiple automated systems track all installation hazardous materials inventories for those hazardous materials used and stored on-site (U.S. Army Garrison APG 2020).

4.7.2.3 Hazardous Waste Treatment, Storage, and Disposal

APG is regulated as a large quantity generator by the MDE. Typical hazardous waste generation for APG is 200,000 to 400,000 pounds annually, with special projects and restoration activities that typically contribute additional quantities. A wide variety of hazardous wastes are generated primarily from research, development, and testing activities performed by tenants (e.g., at the DEVCOM facility) and ongoing remediation activities. Other hazardous waste streams are generated from facility, motor vehicle, aircraft, and electronic systems maintenance. The installation also generates large quantities (i.e., typically greater than one million pounds per year) of industrial wastes that do not meet hazardous waste criteria; however, these wastes require special management and disposal to protect human health and the environment (U.S. Army Garrison APG 2020).

Hazardous waste generators at APG are required to properly collect, manage, and characterize their wastes at the point of generation. Waste-generating activities accumulate small quantities of hazardous waste at approximately 300 satellite accumulation sites located throughout the installation. Most are found in research laboratories. The installation also operates 17 each, 90-day storage sites designed for the accumulation and receipt of larger quantities of waste. From these sites, hazardous wastes are turned over to the DPW-WMB for interim storage and off-site contract disposal at authorized commercial treatment, storage and disposal facilities located around the country. Due to its research, development, test and evaluation activities, APG operates eight units, or facilities, for the on-site treatment and/or long-term (up to one year) storage of certain toxic and explosive wastes. The MDE and USEPA Region 3 have issued hazardous waste and organic air emissions control permits, respectively, to tightly control their activities. Inspection cadre from the DPW-WMB and larger tenant organizations conduct daily, weekly, quarterly, semi-annual and annual inspections of different aspects of APG hazardous waste management program to ensure compliance with state and federal regulations (U.S. Army Garrison APG 2020).

4.7.2.4 Existing Contamination

Historical testing, training, manufacturing, and disposal activities at APG have led to numerous sites with contaminated soil, sediments, groundwater, and/or surface water. Chemical research programs and manufactured chemical agents as well as testing, storage, and disposal of toxic materials have previously occurred on the APG-EA. Primary contaminants of concern include asbestos, chemical weapon munitions, chemical agents, dioxins/dibenzofurans, explosives, herbicides, metals, munitions and explosives of concern, munitions constituents, perchlorate, pesticides, petroleum oil and lubricants, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, radionuclides, semi-volatile organic compounds, VOCs, and white phosphorus. Soil contamination from historical activities includes VOCs, metals, and unexploded ordnance (UXO). Surface water contamination from historical activities includes metals, pesticides, phosphorus, and VOCs (USEPA 2011). Groundwater plumes are also located across both the Aberdeen and Edgewood areas, with some plumes highly contaminated with VOCs. As such, vapor intrusion into buildings is a concern throughout the installation (U.S. Army Garrison APG 2020).

The APG IAP provides evidence that the Army is firmly committed to expeditious identification and cleanup of environmental contamination, and that the installation has a credible, organized program to carry out that commitment. The IAP provides an outline of the total multi-year environmental cleanup program for each site with ongoing or future planned restoration activity and includes the environmental restoration requirements, the rationale for the selected technical approach, and the foundation to develop corresponding financial needs for each cleanup site (U.S. Army Garrison APG 2022c). According to the 2022 IAP, an existing contaminated site is located along the east side of Ricketts Point Road, encompassing North and South Kings Creek Roads and Merkel Street, and the area northwest of Filter Road in APG-EA. The site is located between the MRICD campus and Building E3330 and is comprised of three buildings that were constructed during World War II over the former Fort Hoyle Training site, in the 1960s, and in 1979. The final Remedial Investigation and supplemental risk assessments for the site were completed in July 2018

(U.S. Army Garrison APG 2022c). The media of concern for the site is soil (human health and ecological receptors) and sediment (ecological receptors), and the soil contaminant of concern for the industrial (construction worker) is lead (U.S. Army Garrison APG 2022c). The planned remedial action at the site is in the form of land use controls, with an industrial future, intended land use, and the potential for offsite migration is considered unlikely (U.S. Army Garrison APG 2022c). The planned restoration and cleanup strategy for the site entails completion of the Remedial Investigation/Feasibility Study, Remedial Design, Remedial Action Construction, and continue Long-term Monitoring indefinitely. The anticipated remedy is excavation and off-site disposal, and since levels of hazardous substances are expected to remain above levels that are protective for unrestricted use, land use controls and five-year reviews will be conducted to ensure long-term protectiveness (U.S. Army Garrison APG 2022c).

4.7.2.5 Installation Restoration Program

The DoD's Installation Restoration Program (IRP) was established to provide guidance and funding for the investigation and remediation of hazardous waste sites caused by historical disposal activities at military installations. The fundamental goal of the APG IRP is to protect human health, welfare, safety, and the environment, to include ecological receptors. APG has participated in the Army's IRP since 1976, when the key Army agency conducting IRP actions at APG was the U.S. Army Toxic and Hazardous Materials Agency (now known as the U.S. Army Environmental Command). In 1983, APG assumed total management responsibility of its IRP projects. In 1984, the Defense Appropriation Act established a transfer account to fund the IRP for DoD installations. In 1989, Michaelsville Landfill in APG-AA was listed on the National Priorities List (NPL), while in 1990 all of APG-EA was listed on the NPL, whereby the NPL is a compilation of private and federal hazardous waste sites determined by USEPA for prioritized action based on a release or potential for release of contaminants (U.S. Army Garrison APG 2020).

In March 1990, a Federal Facilities Agreement (FFA) between the DA, APG and the USEPA Region 3 for APG was signed. An FFA is a formal agreement between USEPA, the state, and the Army that establishes objectives, responsibilities, procedures, and schedules for remediation. Although not a formal partner in the FFA, the State of Maryland is actively involved in all aspects of the IRP via coordination between APG and the MDE. The FFA establishes a procedural framework and schedule for compliance with all applicable and relevant requirements with regard to CERCLA studies and remediation of 13 identified study areas in APG-AA and APG-EA. The IRP is implemented subject to and in a manner consistent with CERCLA (1980) as amended by Superfund Amendments and Reauthorization Act (1986) and CERCLA's implementing regulation, the National Oil and Hazardous Substances Pollution Contingency Plan. APG's IRP includes over 252 sites in 13 study areas encompassing both APG-AA and APG-EA. Of these sites, 149 are considered "Response Complete," requiring no further action. Natural resources management is limited on IRP sites while remediation efforts at these sites are ongoing (U.S. Army Garrison APG 2022b).

4.7.2.6 Pesticides

APG's DPW is responsible for the Pest Management Program at APG. The APG Pest Management Program details, identifies, and assigns priorities to the pests and their destructive effects so decisions can be made for any level of protection. Program priorities are: 1) control disease vectors and reservoirs of medical importance; 2) control real property pests; 3) control of stored product pests; 4) control general household and nuisance pests; 5) control ornamental and turf pests; 5) control miscellaneous pests; 6) control quarantine pests; 7) control weeds; 8) carcass disposal; and 9) golf course pest control activities. The Secretary of Defense mandated that installations reduce pesticide usage 50% by the year 2000, and APG has met this target (U.S. Army Garrison APG 2020).

The current program to reduce pesticide usage is managed by the APG Entomologist who is responsible for implementing the APG Integrated Pest Management Plan (IPMP). The IPMP provides a framework through which pest problems can be effectively addressed at APG. Elements of the program, including

health and environmental safety, pest identification, pest management, pesticide storage, transportation, use and disposal are defined within the plan. Used as a tool, the IPMP reduces reliance on pesticides, enhances environmental protection, and maximizes the use of integrated pest management techniques. Pesticides are stored at the entomology building and used on APG in accordance with all applicable federal, state, and installation guidelines (U.S. Army Garrison APG 2020).

4.7.2.7 Unexploded Ordinance

The DoD recognizes its responsibility to protect the public from the potential hazards associated with military operations, both past and present. This is particularly true regarding DoD's use of military munitions in training and testing. To minimize the risk of UXO detonation, all areas suspected of having UXO are subject to specific digging clearance procedures and physical security measures preventing access (U.S. Army Garrison APG 2020).

In accordance with APGR 385-7, *Excavation Permit Program*, all excavation/earth disturbance activities within the boundaries of APG require the preparation of an excavation permit. UXO clearance requirements are to be evaluated and documented in the excavation permit (U.S. Army Garrison APG 2020).

4.7.3 Environmental Consequences

4.7.3.1 Proposed Action

The Proposed Action is the continuation of existing mission-related activities performed at the MRICD facility, which includes training and education activities involving the use and disposal of hazardous and toxic substances.

As part of the execution of the Proposed Action various hazardous substances would be utilized in the way they have been historically and are currently utilized for execution of the same activities associated with the continuation of the existing program. The continued use and subsequent disposal of hazardous, toxic, and/or radioactive substances associated with the following activities that are part of the Proposed Action would be in accordance with MRICD SOPs, Installation regulations/guidance, and all applicable regulations and requirements:

- Use of Expired (Antidote Treatment Nerve Agent Auto-injector) AtroPen injectors associated with continued training and education activities
- Medical Research and Development

It is not anticipated that activities associated with the Proposed Action, other than those listed above, would involve the use or disposal of hazardous, toxic, and/or radioactive substances. The continued use and disposal of hazardous, toxic, and/or radioactive substances would be subject to all required regulations, requirements, and contingency plans as stated previously, and no ground excavation is planned or anticipated as part of the Proposed Action, and therefore, it is not anticipated that contaminated soils or groundwater, or UXO would be encountered. Therefore, it is anticipated that no impacts associated with hazardous, toxic, or radioactive substances impacts would result from the implementation of the Proposed Action.

4.7.3.2 No Action Alternative

Because under the No Action Alternative the MRICD missions would continue, and would be therefore, subjected to the same regulations and requirements for the use, handling, and disposal of hazardous, toxic, and radioactive materials as the Proposed Action and the current operations, it is anticipated that no impacts would result from the No Action Alternative.

4.8 Facilities, Infrastructure, and Utilities

Utilities at APG consist of potable water supply and distribution, wastewater systems, stormwater systems, energy sources, communications, and solid waste. Harford County, Maryland and the unincorporated community of Aberdeen provides several services to the Installation. Many utility services for APG are privatized or are in the process of being privatized.

4.8.1 Affected Environment

4.8.1.1 Potable Water

The potable water delivery systems within APG-AA and APG-EA are two separate systems. In September 2015, the Army signed an agreement with Harford County for Harford County to supply potable water to APG-EA (U.S. Army Garrison APG 2018).

The potable water provided to APG-EA customers comes from multiple sources. Until 2018, the Van Bibber WTP in Edgewood, Maryland produced water for APG-EA, and water was pumped from Winters Run (a surface water source), treated at the Van Bibber WTP, and delivered to APG-EA customers. However, the Van Bibber WTP stopped producing water in August 2018 and since then, APG-EA has purchased water from the Harford County Department of Public Works system. Harford County's water comes from a combination of sources, including Loch Raven Reservoir, the Susquehanna River, and subsurface potable water wells (U.S. Army Garrison APG 2021b). The potable water system currently serves approximately 6,500 people throughout the service area. The per capita water demand is directly related to the various facilities located on APG-EA that are classified as commercial and light industrial (Harford County 2023).

In 2020, Harford County constructed a metered interconnection with the water main, located adjacent to the Van Bibber WTP, that serves APG-EA. The Army and Harford County have executed an agreement for Harford County to provide the Army with a maximum of 1.5 mgd of potable water (Harford County 2023).

4.8.1.2 Electricity and Energy

Baltimore Gas and Electric (BGE) supplies APG with electricity via a 110-kilovolt transmission line from BGE's Perryman Island Power Plant to the APG-EA's Magnolia substation in the northwest corner of the APG-EA Cantonment.

The Operations and Maintenance Division is responsible for management of the Energy Conservation Program on the Installation, and APG has partnered with BGE to manage and perform energy efficient lighting retrofits for interior lighting systems. This program will help APG meet its commitment to the USEPA Green Lights Program (U.S. Army Garrison APG 2008). The electric system at APG is privatized. Privatization (the transfer of ownership, responsibilities, investments, upgrades, and continued operation and maintenance to the non-federal sector) allows installation commanders to commit energy and resources to defense missions and functions. Historically, military installations were unable to upgrade and maintain reliable utility systems due to inadequate funding and competing installation management priorities. BGE owns the main substations entering the Installation. There is one main substation in APG-EA (Magnolia Substation) and two in APG-AA (Harford Substation and Aberdeen Substation).

Commercial contractors supply gasoline, diesel fuel, and heating oil for APG-EA (USAMRMC 2004).

4.8.1.3 Stormwater

Stormwater is defined as rainwater that flows overland; accumulates in gutters, ditches, and culverts; and travels through storm drains to streams. In the developed areas of APG, stormwater runoff is managed by

storm sewers and catch basins. In less developed areas, runoff is managed by drainage swales (U.S. Army Garrison APG 2018). Contamination of surface waters at APG has resulted from historic discharges of sanitary, laboratory, and industrial wastewaters, historic disposal of solid and liquid wastes, and stormwater runoff, erosion, and sedimentation. Inorganic chemicals have been detected at concentrations exceeding water quality criteria in streams draining from APG (USACE 2014). In order to protect the water quality of the tributaries and rivers, APG implements measures around disturbed areas (e.g., construction sites) to minimize stormwater runoff, erosion, and sedimentation.

Provisions of COMAR 26.17.02.01 require that all jurisdictions in Maryland implement a stormwater management program to control the quality and quantity of stormwater runoff resulting from new development (MDE 2010). The primary goals of the state and local stormwater management programs are to maintain after development, as nearly as possible, the predevelopment runoff characteristics, and to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding by implementing environmental site design to the maximum extent practicable and using appropriate structural best management practices only when necessary (U.S. Army Garrison APG 2018).

COMAR Title 26.17.02.05 (when stormwater management is required) exempts any developments that do not disturb more than 5,000 square feet of land area or 100 cubic yards of earth. Conversely, developments disturbing more than 5,000 square feet of land or 100 cubic yards of earth require stormwater management. The Stormwater Management Plan requirements are outlined in COMAR 26.17.02.09 (U.S. Army Garrison APG 2018).

4.8.1.4 Solid Waste

DPW-ED is responsible for management of solid waste and recycling programs. All solid wastes are removed by a private contractor while APG records and manages disposal by fulfilling the Quality Reporting Requirement. APG complies with the AR 200-1, Environmental Quality; AR 420-49, Utility Services; and the applicable elements of federal, state, and local regulations which set forth direction and general policy for solid waste management. APG maintains an Integrated Solid Waste Management Plan that reflects Army Policy regarding solid waste diversion goals for municipal solid waste and construction and demolition waste. Army requirements and previous APG Integrated Solid Waste Management Plans have established diversion goals of 40% for municipal solid waste and 50% for construction and demolition debris (U.S. Army Garrison APG 2022b). APG surpassed the Army 40% diversion goal and the DoD Sustainability Performance Goals in 2010-2012, and the projections for 2017 and 2022 indicated that APG would fall below the Army and DoD diversion goals based on 5-year projections (2018-2022), during which time the diversion rates were well below the goals in 2008 and 2009 (U.S. Army Garrison APG 2022b).

Kirk U.S. Army Health Clinic obtains medical waste disposal services through a U.S. Army Medical Command contract. Edgewood Chemical Biological Center, US Army Public Health Center, MRICD, and Army Research Lab receive services through the DPW-managed Hazardous and Industrial Waste Disposal contract. All medical waste is collected by private contractors and either incinerated or autoclaved (followed by landfill disposal) offsite at appropriately permitted and authorized solid waste disposal facilities (U.S. Army Garrison APG 2018). APG holds a Controlled Hazardous Substance (CHS) Permit A-190 from the MDE Solid Waste Program, which authorizes the operation of hazardous waste management facilities at APG-EA, and the Old Bombing Field Open Burn and Detonation Units, which are located in APG-AA (MDE n.d.).

4.8.1.5 Wastewater

4.8.1.5.1 Collection System

The sanitary sewer/wastewater system for APG-EA is owned and operated by APG. Wastewater generated at APG generally flows from the facility through the gravity collection lines, where it flows then to the wastewater treatment plant (WWTP) facility located in the southwest portion of APG-EA. Some collection lines flow to lift stations where the wastewater is pumped to a gravity line through which it flows to the WWTP (U.S. Army Garrison APG. 2018).

Most of the wastewater lines at APG-EA were installed in the early 1940s. Pipe sizes range from 1½ - to 30 inches and are predominately vitrified clay. Since the 1940s, only minor areas have been added and there have been only minor upgrades within the system. Harford County's specifications have been adopted by the Army for its wastewater collection system (U.S. Army Garrison APG. 2018).

4.8.1.5.2 Lift Stations

There are 44 lift stations located throughout APG. Fourteen (14) of the lift stations are of the drywell/wet well type and the remaining are submersible types. Fourteen of the lift stations have a dedicated emergency generator and all lift stations, but one, are duplex stations. The remaining lift station is a simplex lift station. There are three major lift stations at APG-EA: E-3250, E-4383, and E-5296. Lift station E-3250 is located along South Kings Road and collects all the wastewater in an area east of Ricketts Point Road, north of Beach Point Road and east of Hoadley Road. Lift station E-4383 is located along Douglas Road and collects the wastewater generated south of Austin Road and west of Otto Drive. Lift station E-5296 is located near the intersection of Noble Road and 14th Street and collects the wastewater generated north of Noble Road and west of Hoadley and Ricketts Point roads (U.S. Army Garrison APG. 2018).

4.8.1.5.3 Wastewater Treatment Plant

All the wastewater generated at APG-EA is transported to the Installation's WWTP facility for treatment and disposal. The WWTP facility is located on the southeast side of APG-EA at the terminus of Beach Point Road (U.S. Army Garrison APG. 2018).

The WWTP facility was originally constructed in the early 1940s and provided primary treatment of the wastewater prior to disposal into Bush River, a part of the Chesapeake Bay watershed. In 1968, trickling filters were added providing secondary treatment. In the 1980s, five chemical feed systems were added to the plant. Three of the chemical feed systems are for ferric chlorine, lime and polymer to control phosphorus removal and the remaining two chemical feed systems, chlorination and dichlorination (sulfur dioxide), are used for disinfection prior to discharge into Bush River. The outfall is marked in the Bush River with a navigational buoy. The buoy is placed at the outfall in spring and removed in fall, depending on the timing of freeze-thaw conditions (U.S. Army Garrison APG. 2018).

The WWTP facility's present rated capacity is 1.2 mgd with an average daily flow to the plant of 0.9 mgd. The WWTP facility has experienced peak inflow of 11.0 mgd measured flow rate. The plant is partially automated. It is operated and manned 24 hours per day, 7 days a week (U.S. Army Garrison APG. 2018).

An upgrade of the WWTP to meet National Pollution Discharge Elimination Program (NPDES) permit standards was completed in 2016. The upgrade included new screening facility, secondary inlet pumping station, moving bed bioreactor, de-nitrification filters, blower building, ultraviolet disinfection, sludge processing, and shellfish protection storage tanks (U.S. Army Garrison APG. 2018).

4.8.1.5.4 Septic Tanks and Drain Fields

There are 20 septic tanks and drain fields that treat and dispose wastewater generated at individual facilities within the Installation. The septic tank locations are for facilities that cannot conveniently be located near a wastewater collection line (U.S. Army Garrison APG. 2018).

4.8.1.5.5 Grease Traps

There are six grease traps at individual facilities located within the Installation. Presently, the active grease traps are pumped at two-week intervals. The inactive tanks could be placed in service at any time. When the grease traps are placed in service, they become a part of the active wastewater utility system and will require pumping at two-week intervals. The material removed from the tanks are disposed in accordance with controlling regulations. The grease traps are considered a part of the wastewater utility system at APG-EA (U.S. Army Garrison APG. 2018).

4.8.2 Environmental Consequences

4.8.2.1 Proposed Action

It is anticipated that the continuation of existing training and education activities, the medical research and development, and the consultation activities would not impact facilities though implementation of the Proposed Action. However, there is potential for minor-to-moderate, short-term impacts to facilities during construction activities associated with proposed facility improvements, but anticipated positive, long-term, permanent impacts resulting from proposed facility improvements. The proposed facility improvements are expected to result in major laboratory enhancements over the next 5 years, which would greatly improve the useability and efficiency of the facilities and their use of resources.

4.8.2.2 No Action Alternative

Anticipated impacts to facilities under the No Action Alternative would generally be the same as identified for the Proposed Action, however, since the No Action Alternative differs from the Proposed Action relative to the process by which future activities would be evaluated for impacts and subsequently approved, without the ability to tier from this PEA, it is anticipated that the need for additional analysis concerning the potential for impacts resulting from proposed facility improvements could delay the start of construction for these improvements. Therefore, the No Action Alternative could result in a moderate impact to facilities, infrastructure, and utilities due to the potential delay in onset of construction associated with these improvements, which are expected to result in major laboratory enhancements.

4.9 Cultural Resources

4.9.1 Affected Environment

APG is ideally located for the historic exploitation of estuarine, interior wetland, boreal, and agricultural environments by human populations. Therefore, the installation possesses potentially rich cultural significance due to its proximity to a variety of ecological habitats. Historic properties located on APG are those that have been formally determined eligible for listing in the National Register of Historic Places (NRHP) through written consensus agreements with the Maryland State Historic Preservation Office (SHPO) (i.e. the MHT), or by written determination of the Keeper of the National Register, National Park Service (U.S. Army Garrison APG 2008).

Cultural resources are defined as prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for traditional, religious, scientific, or any other reason. Cultural resources include, but are not limited to

buildings, structures, prehistoric and historic archaeological sites, native sacred sites, and cemeteries (EA Engineering 2014).

APG manages historic properties through its Integrated Cultural Resources Management Plan (ICRMP). This plan identifies all previous and current cultural resource management activities and needs that have occurred and continue at the installation, along with addressing and documenting all federal historic preservation legislation and U.S. ARs pertinent to protecting these historic properties. Guidance and SOPs within the ICRMP allow APG to efficiently manage all known and unknown historic properties within the military mission (EA Engineering 2014).

A cultural resources desktop review was conducted using Medusa, Maryland's Cultural Resource Information System to identify previously recorded cultural resources and surveys within the APG-EA study area depicted on **Figure 1-1**. Within this study area, 2 NRHP properties, 26 Determination of Eligibility (DOE) forms, 59 architectural and historical resources, 29 archaeological sites, 13 archaeological quad map files, and 8 archaeological surveys have been recorded. Of these known cultural resources and surveys, 2 DOE forms, 3 architectural resources, 1 archaeological site and 1 archaeological survey are within or adjacent to the Proposed Action. The resources within or adjacent to the Proposed Action are discussed in further detail.

4.9.1.1 Archaeological Resources

Archaeological site 18HA290 is recorded as a 20th century barracks that corresponds with the former location of the "Enlisted Mens' Barracks" as depicted on a 1918 map. Artifacts recovered included both architectural and domestic debris. No NRHP status was recorded within Medusa for this resource. Site 18HA290 likely corresponds with HA-1950, an architectural resource discussed in the next section.

The one archaeological survey (HA 109) was conducted in 2009 by R. Christopher Goodwin & Associates, Inc. The archaeological survey was conducted on behalf of the MRICD within portions of the Proposed Action.

4.9.1.2 Architectural Resources

The architectural resources (HA-1856, HA-1950 and HA-2074) include a pump house and residential housing. HA-1856 corresponds with two water well pumphouses constructed during World War II. HA-1856 was considered not eligible for listing in the NRHP. HA-1950 is nine units associated with non-commissioned officers' quarters that are considered typical military housing for families. Built in the 1930s, portions of these buildings have been demolished diminishing their integrity for listing in the NRHP. HA-2074 corresponds with the Fort Hoyle non-commissioned officers' quarters on Chevron Drive. Constructed in the 1930s, this housing complex consisted of 11 brick dwellings and 3 brick garages; it was recommended eligible by the MHT as a historic district in 2007.

DOE forms have been completed for Building E3103 (DOE-HA-0165) and Building E3106 (DOE-HA-0166). Building E3103 was constructed in 1992 as a general instruction building (or classroom) for the MRICD. Building E3106 was constructed in 1995 as a general purpose and administrative space for the MRICD. Both resources are considered not eligible for listing in the NRHP.

4.9.1.3 Section 106 Consultation

In November 2023, a cultural resources desktop assessment was completed for the Proposed Action in order to identify historic properties/cultural resources within the Area of Potential Effect (APE) that may be impacted by the project. This information was provided to the MRICD using the MHT's Project Review Form. This document is included as **Appendix A**, and will be available to the MHT, other applicable agencies, and Tribes to review for a 15-day comment period as part of this PEA.

4.9.1.4 Native American Resources Consultation

In November 2023, a cultural resources desktop assessment was completed for the Proposed Action in order to identify historic properties/cultural resources within the Area of Potential Effect (APE) that may be impacted by the project. This information was provided to the MRICD using the MHT's Project Review Form. This document is included as **Appendix A**, and will be available to the MHT, other applicable agencies, and Tribes to review for a 15-day comment period as part of this PEA.

4.9.2 Environmental Consequences

Adverse effects on historic properties as a result of the Proposed Action include the following:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous substance remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within its setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; and,
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.9.2.1 Proposed Action

Of the known architectural resources located within the APE, only HA-2074 has been recommended eligible for listing in the NRHP as a historic district. The MRICD has determined that the Proposed Action will not impact this resource. The Proposed Action also does not contain ground disturbing activities. As a result, archaeological site 18HA290 would not be impacted by the Proposed Action. Significant adverse impacts to cultural resources are not expected.

4.9.2.2 No Action Alternative

No cultural impacts have been identified from the current use of the MRICD facility. As such, the No Action Alternative is not anticipated to affect archaeological, architectural, or Native American resources. Under the No Action Alternative, the MRICD missions would continue; however, MRICD mission-related activities would be unable to tier from the PEA analysis and would have to conduct repetitive analyses for each mission activity. In addition, the basis for environmental decision making would rely on older, sometimes outdated EISs, EAs, RECs, and associated data.

4.10 Socioeconomics and Protection of Children

Socioeconomics describes a community by examining its social and economic characteristics. Demographic variables such as population size, level of employment, and income assist in analyzing the fiscal condition of a community and its government, school system, public services, healthcare facilities, and other amenities.

4.10.1 Affected Environment

4.10.1.1 Employment

APG is the sixth largest employer in Maryland and the largest in Harford County—APG has a workforce of more than 39,000 jobs earning $2 billion in wages (DoD, undated). MRICD possesses a work force of more than 300 people, including civilian employees, military, and contractor personnel (MRICD, n.d. (d)). Harford County as a whole hosts approximately 94,000 employment positions (U.S. Bureau of Labor Statistics 2024a). The unemployment rate in Harford County was approximately 2% in 2024; this is equivalent to the unemployment rate for the State of Maryland as a whole (U.S. Bureau of Labor Statistics 2024b).

4.10.1.2 Economy

APG is significant in the regional economy—it represents an economic impact of $1.6 billion per year to Maryland (DoD, n.d.). In addition to the direct employment at APG and MRICD, more than 10,000 additional jobs throughout the economy are likely supported by the wages spent by the 39,000 direct employees. Harford and Cecil counties realize the greatest social and economic effects from the installation's presence due to their geographic proximity.

4.10.1.3 Housing

Approximately 1,106 housing units are present on APG; approximately 20% of these are identified as being vacant. Harford County contains 103,522 housing units; approximately 5% of these are identified as being vacant. The rental vacancy rate in the County stands at less than 4% (U.S. Census Bureau 2024a).

4.10.2 Environmental Consequences

4.10.2.1 Proposed Action

4.10.2.1.1 Socioeconomics

Under the Proposed Action, activities associated with meeting the MRICD missions discussed in Section 2 would continue to be performed. While the specifics of activities may evolve over time, it is anticipated that the types of activities (training/education; medical research/development; collaboration/consultation; and potential facility improvement activities) planned to occur over the next 5 to 7 years will not change, and further it is not anticipated that a large increase in the number of workers associated with MRICD, nor that a large reduction in the number of workers, would be necessary to meet the MRICD missions in the 5 to 7 year time period under evaluation. The Proposed Action, from a socioeconomic perspective, represents a continuation of the *status quo*. Previous socioeconomic impact analysis has indicated that adverse indirect socioeconomic impacts of activities at APG akin to the MRICD mission have been negligible to minor, and on balance, the socioeconomic impact is rated beneficial (USAMRMC 2004; U.S. Army Garrison APG 2022a). Therefore, no significant impacts to the socioeconomic conditions in the area are anticipated from the Proposed Action; any impacts would be less than significant and generally *de minimis* given the relatively small number of workers at the MRICD compared with APG as a whole and given the small percentage of employment in Harford County represented by employment at MRICD.

4.10.2.1.2 Protection of Children

The Proposed Action would not be reasonably expected to cause a significant adverse impact on the environmental health and safety risks that might otherwise disproportionately affect children in the residential areas on APG: access to facilities and other use areas would continue to be restricted to authorized personnel only. This measure would continue to ensure that children living in the Census Tract

would not have access to activities that could pose a health and safety risk. Therefore, the Proposed Action would have no impact on the health and safety of children.

4.10.2.2 No Action Alternative

Socioeconomic impacts under the No Action Alternative would be the same as identified for the Proposed Action. The No Action Alternative and the Proposed Action differ only in the means of approving future activities related to the MRICD missions; the MRICD missions (from which potential environmental consequences could result) would continue. Therefore, the No Action Alternative would have no impact on the health and safety of children.

4.11 Human Health and Safety

4.11.1 Affected Environment

The Army established a Hazardous Materials Management Program to reduce hazardous materials inventories, reduce the generation of solid and hazardous wastes, and ultimately protect human health and the environment by the adoption of standardized business practices that include:

1. Reduced reliance on hazardous materials through P2 actions;
2. Institutional controls on hazardous materials acquisition and use;
3. Hazardous materials inventory control; and,
4. Hazardous materials reuse, recycling, and enhanced shelf-life management (MRICD 2022).

The Safety Office (SO) manages the MRICD Hazard Communication Program consistent with 29 CFR 19.10.120, *Occupational Safety and Health Standards* and Chapter 12 to the existing MRICD Safety Program. In addition, the SO is responsible for providing facility personnel access to Safety Data Sheets to supplement those obtained by facility employees from vendors during hazardous materials acquisition, manages the MRICD tracking system, reviews hazardous materials purchases and use, ensures and enables required HAZCOM training for all employees who may handle hazardous chemicals, provides technical assistance for the selection and use of PPE for hazardous materials users and handlers, and conducts periodic workspace inspections to evaluate the safe use of hazardous materials, and the proper installation and use of engineering controls to eliminate and/or reduce exposures to hazardous chemicals (MRICD 2022).

In accordance with the MRICD Hazardous Material Management Plan, MRICD is committed to reducing the volume of all on-hand chemicals and reducing and/or eliminating the use of hazardous materials whenever feasible. All lab, facilities and support personnel limit their daily use to the extent feasible, of hazardous materials without compromising critical medical chemical defense research and support activities. In addition, hazardous material storage and use areas must meet applicable design criteria for fire and worker safety (MRICD 2022).

Various contingency plans are in place to address proper procedures in the event of a safety issue, including:

- MRICD Chemical Hygiene Plan;
- APG Emergency Response Plan;
- Environmental Release Prevention and Response Plan;
- MRICD Safety Program Emergency Action Plan;
- MRICD Safety Program Chemical Incident Mishap Response and Assistance Plan; and,
- MRICD Hazardous Waste Emergency Response Quick Reference Guide (MRICD 2022).

4.11.2 Environmental Consequences

4.11.2.1 Proposed Action

Implementation of the Proposed Action would be in accordance with all required regulations, plans, and health and safety measures. It is anticipated that personnel within and in proximity to MRICD would wear appropriate PPE and adhere to all appropriate and required local, state, and federal requirements for the acquisition, handling, use, and disposal of hazardous and/or toxic materials.

It is not anticipated that the continuation of MRICD activities and mission requirements would result in accidents, occupational injuries, or illness that would impede missions, readiness, quality of life, or morale at MRICD or within the confines of APG. The implementation of the Proposed Action would not result in an unsafe workplace, equipment, or operations, nor would the implementation of the Proposed Action result in accidents, injuries, or health complications to the general public. Therefore, impacts to human health and safety resulting from the implementation of the Proposed Action are not anticipated.

4.11.2.2 No Action Alternative

The No Action Alternative is the implementation of the continuing MRICD program and activities, but without the ability to tier from this PEA analysis; therefore, potential for impacts to human health and safety from the implementation of the No Action Alternative is anticipated to be the same or similar to those of the Proposed Action. The adherence to all required regulations, plans, and health and safety measures, the continued use of appropriate PPE, and the adherence to all appropriate and required local, state, and federal requirements would continue. Therefore, impacts to public health and safety resulting from the implementation of the No Action Alternative are not anticipated.

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5 REASONABLY FORSEEABLE ACTIONS AND CUMULATIVE IMPACTS

The NEPA regulations require assessment of cumulative impacts in the decision-making process for federal projects.

For the purposes of this PEA, cumulative impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of who undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Given the localized nature of the Proposed Action, a Study Area has been defined for evaluation of potential impacts to human and natural resources within one-half mile of the MRICD facility. This constitutes the Proposed Action's Region of Influence (ROI) for cumulative effects. This ROI includes areas where the Proposed Action's effects would most likely contribute to cumulative environmental effects.

Table 5-1 presents a wide range of past, present, and reasonably foreseeable future actions in the ROI that could contribute to cumulative environmental effects in combination with the Proposed Action. The information in this table represents a review of credible online sources, local planning documents, and communication with the local planning agencies responsible for lands or projects within the ROI. Only "reasonably foreseeable" projects (well-developed, in mature planning stages, and/or with secure funding) are considered in the cumulative impact analysis (**Table 5-1**). Conceptual projects, broad goals, objectives, or ideas listed in planning documents that do not meet the above criteria are not considered reasonably foreseeable for the purposes of this analysis. To provide for a more complete understanding of the range of potential cumulative effects, it is appropriate to reconsider the topics evaluated previously in this EA as presented below.

Table 5-1. Improvements Planned within the MRICD Facility

Project	Timing	General Location
E2900 - MRICD Brine Holding Tank	Fiscal Year (FY) 20	MRICD
E2900 - New Cage Wash Annex	FY 23	MRICD
E2900 - Construct Secure Compartmented Information Facility (SCIF)	FY 20	MRICD
E2900 - Temporary Contractor Construction Trailer	FY 21	MRICD
E2900 - Convert Rooms to Gym	FY 21	MRICD
E2900 - Duct Modifications	FY 21	MRICD
E2900 - Electrical Modifications	FY 20	MRICD
E2900 - Portable Crane System	FY 20	MRICD
E2900 - Repair Window Seals	FY 23	MRICD
E2900 - Replace Cage and Rack Washers	FY 21	MRICD
E2900 - Roof Replacement Section 1	FY 21	MRICD
E2900 - Roof Replacement Section 2	FY 21	MRICD

Project	Timing	General Location
E2900 - Install Window Tinting and Shades	FY 20	MRICD
E2900 - Upgrade Animal Drinking Water Skid	FY 23	MRICD
E2900 - Upgrade Animal Lighting System	FY 22	MRICD
E2900 - Repair Window Seals	FY 22	MRICD
Electrical Modifications	FY 20	MRICD
E2901 - Install Bathroom	FY 21	MRICD
E2901 – liquid propane (LP) Manifold Completion	FY 20	MRICD
E2901 - Replace Roof	FY 20	MRICD
E3103 - Repair Cold Weather Damage	FY 23	MRICD
E3109 - Replace Roof	FY 24	MRICD
E2900 - Critical Electrical Redundancy	FY 21	MRICD
Move Hazardous Chemicals at MRICD from Building E3081 to E2900	FY 21	MRICD

5.1 Geology, Soils, and Topography

Short-term affects from the project activities, specifically monthly training and education activities at the field site, may temporarily impact the vegetative cover throughout the year but is not anticipated to significantly impact the overall topography, soil composition, or geological resources. Cumulative impacts on geological resources from the implementation of Proposed Action and the improvements included in **Table 5-1** are anticipated to be minor, temporary, and not significant.

5.2 Air Quality

Short-term emissions from the project activities would impact air quality temporarily and the impact would cease after each activity is completed. The cumulative impacts on air quality from the implementation of Proposed Action and the improvements included in **Table 5-1** are anticipated to be minor, temporary, and not significant.

5.3 Noise

The noise resulting from the operation of construction equipment is an unavoidable condition. Although construction noise would occur under the Proposed Action, noise would be temporary, localized, and cease upon the completion of the MRICD facility improvements. While construction noises, in combination with ongoing stationary regular operational noises at MRICD, may present noise conditions above those which occur currently, and in the absence of construction related noise, it is expected that these conditions would be temporary in nature, ceasing upon completion of construction activities. Therefore, no significant cumulative impacts related to noise are anticipated.

5.4 Water Resources

No impacts to water resources are anticipated to result from implementation of the Proposed Action. Therefore, in combination with the projects included in **Table 5-1**, no aggregated impacts to water resources are expected, and no cumulative impacts related to water resources are anticipated.

5.5 Coastal Zone Management

No impacts to Maryland's coastal resources are anticipated to result from implementation of the Proposed Action, because it is expected that all work associated with the Proposed Action would take place entirely within the existing building and established outdoor training site. In addition, all activities associated with the implementation of the Proposed Action would be consistent with Maryland's enforceable policies and the Memorandum of Agreement between the State of Maryland and the DoD. Therefore, in combination with the projects included in **Table 5-1**, the implementation of the Proposed Action would not result in cumulative impacts to the coastal zone.

5.6 Biological Resources

No impacts to biological resources are expected to result from the implementation of the Proposed Action due to the implementation of stringent engineering controls and the seasonality associated with training activities. Therefore, in combination with the projects included in **Table 5-1**, no cumulative impacts related to biological resources are anticipated.

5.7 Hazardous, Toxic, and Radioactive Substances

The Proposed Action would continue to generate additional hazardous and industrial wastes. While the total volume of hazardous and industrial wastes could be significant when evaluated over several years of continued activity at MRICD, the quantity of these wastes in a given year would only slightly or moderately impact APG's overall waste generation quantities, as they would not deviate significantly from the current scenario, and they would be readily managed under the Installation's current hazardous waste program. Cumulative impacts on hazardous, toxic and radioactive substances from the implementation of the Proposed Action and the list of projects and improvements detailed in **Table 5-1** are not anticipated. The projects in **Table 5-1** are related generally to the interior and exterior structures and upgrades to existing structures of the current MRICD facility buildings, with the exception of the new construction of the MRICD Brine Holding Tank and the New Cage Wash Annex, and the movement of existing hazardous chemicals at MRICD from one existing MRICD building to another. Because it is expected that the movement of those existing hazardous chemicals would be accomplished in accordance with all existing requirements and regulations, and in accordance with all safety measures and contingency plans required for the safe use, handling and disposal of hazardous materials, no cumulative impacts to hazardous, toxic, and radioactive substances are anticipated.

5.8 Facilities, Infrastructure, and Utilities

The projects in **Table 5-1** are related generally to the interior and exterior structures and upgrades to existing structures of the current MRICD facility buildings, with the exception of the new construction of the MRICD Brine Holding Tank and the New Cage Wash Annex, and the movement of existing hazardous chemicals at MRICD from one existing MRICD building to another. As it is expected that the Proposed Action would result in the potential for minor-to-moderate, short-term impacts to facilities during construction activities, it is expected that those impacts would be compounded by construction activities associated with the projects listed in **Table 5-1**, when those activities would occur simultaneously, in quick succession, or in close proximity. However, because these impacts are individually expected to be short term and temporary in nature, it is not anticipated that significant cumulative effects would result to facilities from construction activities. Long-term, cumulative impacts are anticipated to be positive,

resulting from the various upgrades to the MRICD facilities associated with a combination of the Proposed Action facility improvements and the projects listed in **Table 5-1**.

5.9 Cultural Resources

As stated in Section 4.10, 2 DOE forms, 3 architectural resources, and 1 archaeological site are within or adjacent to the Proposed Action. Only HA-2074 has been recommended eligible for listing in the NRHP as a historic district. The MRICD will coordinate with the MHT on potential direct impacts to this resource. However, it is not anticipated that there will be cumulative impacts to this resource.

The Proposed Action does not contain ground disturbing activities. As a result, there should be no cumulative impacts to archaeological site 18HA290 due to the Proposed Action. In addition, given the nature of the Proposed Action, there should be no viewshed impacts to NRHP-listed or eligible resources visible from the Proposed Action.

In summary, there are no anticipated direct or indirect impacts on historic properties resulting from the Proposed Action, and consequentially, no foreseeable cumulative effects are expected.

5.10 Socioeconomics and Protection of Children

The cumulative projects identified in **Table 5-1** represent a range of improvements to the MRICD facility; these small activities are typical of facility maintenance and upgrades that occur over the lifetime of facilities. The Proposed Action would not result in any significant socioeconomics-related consequences given the small scope of the cumulative projects and that these cumulative projects are and would be performed over a number of years. Therefore, no cumulative socioeconomic-related consequences would be realized.

5.11 Human Health and Safety

The Proposed Action is not anticipated to result in cumulative impacts to human health and safety when considered in combination with the list of projects and activities in **Table 5-1** because all activities that take place within the MRICD facility campus are subject to the same required regulations, plans, and health and safety measures.

6 CONCLUSION

This PEA analyzes potential environmental, cultural, and socioeconomic effects associated with the continuation of performing mission-related medical, chemical, biochemical, and non-kinetic research/development at MRICD at APG-EA. The Proposed Action is comprised of a number of training and educational activities, medical research and development, consultation activities, and facility improvements that are planned to continue over a multi-year period (5 to 7 years). The activities comprised within the definition of the Proposed Action are a continuation of the current activities taking place within the MRICD facility and additional facility improvements. The No Action Alternative to the Proposed Action is comprised of the same activities as the Proposed Action without the ability to tier from this PEA analysis.

The EA was prepared in accordance with the NEPA and implementing regulations issued by the CEQ and 32 CFR Part 651.

The Proposed Action is expected to result in short-term, minor impacts to air quality; noise; and facilities, infrastructure, and utilities. The Proposed Action is expected to result in negligible impacts to cultural resources and socioeconomics. Long-term beneficial impacts provided by the Proposed Action would be to facilities, infrastructure, and utilities. The Proposed Action Alternative is expected to have no impact on geology, soils, and topography; water resources; coastal zone management; hazardous, toxic, radioactive substances; and human health and safety.

The No Action Alternative and the Proposed Action differ only in the means of evaluating the potential for impacts and approving activities related to the MRICD missions. Therefore, it is anticipated that the potential activities associated with the current Proposed Action would continue, but would rely on the use of older, sometimes outdated environmental reviews and data, to determine the potential for impacts. The No Action Alternative is expected to potentially result in short-term, minor impacts to air quality; noise; and facilities, infrastructure, and utilities. The No Action Alternative is expected to potentially result in negligible impacts to socioeconomics. Moderate impacts to facilities, infrastructure, and utilities are anticipated to result from the No Action Alternative as it relates to the proposed facility improvements. The No Action Alternative is expected to have no impact on geology, soils, and topography; water resources; coastal zone management; biological resources; hazardous, toxic, and radioactive substances, cultural resources, and human health and safety.

Based on the evaluation of environmental effects described in Section 4, the Proposed Action will not result in a significant impact to the environment. Therefore, an EIS will not be necessary for this Proposed Action. This conclusion is documented in the FNSI found at the beginning of this report.

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APPENDIX A: Agency Coordination

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From: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Sent: Wednesday, April 17, 2024 11:19 AM
Subject: Agency coordination regarding the Environmental Assessment for

Greetings
The U.S. Army Garrison Aberdeen Proving Ground would like to coordinate with your agency regarding a National Environmental Policy Act analysis for the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground – Edgewood Area

The Proposed Action is for the USAMRICD to continue performing mission-related activities at the USAMRICD campus over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from USAMRICD training/education; medical research/development; consultation/collaboration; and potential facility improvement activities planned to occur over the next 5 to 7 years. This input will be considered and incorporated into the preparation of the National Environmental Policy Act analysis.

Further details concerning USAMRICD may be found at the following link: https://usamricd.health.mil/Pages/default.aspx

V/r

ARNOLD O'SULLIVAN
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DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
U.S. ARMY GARRISON ABERDEEN PROVING GROUND
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MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Agency coordination regarding the Programmatic Environmental Assessment for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) Mission Activities at Aberdeen Proving Ground – Edgewood Area

The U.S. Army Garrison Aberdeen Proving Ground (APG) would like to coordinate with your agency regarding a Programmatic Environmental Assessment (PEA) for the U.S. Army MRICD to continue performing mission activities at APG's Edgewood Area (APG-EA). The PEA is being prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code Section 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (40 Code of Federal Regulations [CFR], 1500 to 1508); and 32 CFR Part 651, *Environmental Analysis of Army Actions*. This PEA will analyze the potential impacts to the natural and human environment that could result from this project. The MRICD campus is located in Harford County in the APG-EA (Enclosures 1 and 2).

The Proposed Action is for the MRICD to continue performing mission-related activities at the MRICD campus over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from MRICD training/education; medical research/development; consultation/collaboration; and potential facility improvement activities planned to occur over the next 5 to 7 years.

In accordance with 40 CFR 1500-1508, the Army invites you to provide early input on the Proposed Action. This input will be considered and incorporated into the preparation of the PEA. This notice is being provided via email to organizations that are known to have an interest in this project; a distribution list is enclosed (Enclosure 3). Please bring this matter to the attention of any others who may have an interest. Your attention to this matter is appreciated. We respectfully request that any comments and/or questions be submitted within 30 days of receipt of this notice to: USAGAPG/Department of the Army, IMAP-PWE c/o Arnold O'Sullivan, 4304 Susquehanna Ave, 3rd Floor Suite B, APG MD 21005-5001; or E-mail: arnold.v.osullivan.civ@army.mil.

Once the Draft PEA is completed, it will be published for a 30-day review period. A Notice of Availability will be sent to the organizations and published in local newspapers to inform the public of the start of the review period. The Draft PEA will be printed and provided to local libraries.

Sincerely,

///SIGNED///
Vance G. Hobbs
Chief, Environmental Division
Directorate of Public Works

Enclosure 3: Agency Distribution List

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zoning@harfordcountymd.gov

Maryland

MDP Clearinghouse -MDP- <mdp.clearinghouse@maryland.gov>

Agency coordination regarding the Environmental Assessment for

1 message

O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Wed, Apr 17, 2024 at 11:19 AM

Greetings

The U.S. Army Garrison Aberdeen Proving Ground would like to coordinate with your agency regarding a National Environmental Policy Act analysis for the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground – Edgewood Area

The Proposed Action is for the USAMRICD to continue performing mission-related activities at the USAMRICD campus over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from USAMRICD training/education; medical research/development; consultation/collaboration; and potential facility improvement activities planned to occur over the next 5 to 7 years. This input will be considered and incorporated into the preparation of the National Environmental Policy Act analysis.

Further details concerning USAMRICD may be found at the following link: https://usamricd.health.mil/Pages/default.aspx

V/r

ARNOLD O'SULLIVAN

Directorate of Public Works

Environmental Division

Office: 410-306-2731

Cell Phone: 410-322-6630

FAX: 410-306-2252

MRICD Agency Letter.pdf
435K

From: sylvia.mosser@maryland.gov <sylvia.mosser@maryland.gov>
Sent: Friday, April 19, 2024 5:14 PM
To: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Cc: sylvia.mosser@maryland.gov
Subject: Acknowledgment of Clearinghouse Project: MD20240418-0265

Hello Mr. Arnold O'Sullivan,

The following link includes the State Clearinghouse Review Process Acknowledgment letter for your project, Early Input for the Draft Programmatic Environmental Assessment: Proposed Action is for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to Continue Performing Mission-Related Activities at the MRICD Campus Over the Next 5 to 7 Years at Aberdeen Proving Ground.

Click this link to view the acknowledgment letter, **https://apps.planning.maryland.gov/EMIRC_Files/MD20240418-0265.zip** . This is a 694 KB file.

Thank you.

Sylvia Mosser, Planner
sylvia.mosser@maryland.gov
410-767-4487

Jason Dubow, Unit Manager
jason.dubow@maryland.gov
410-767-3370
Please take our customer service survey.

April 19, 2024

Mr. Arnold O'Sullivan, Directorate of Public Works, Environmental Division
U.S. Army Garrison, Aberdeen Proving Ground
IMAP-PWE
4304 Susquehanna Avenue
3rd Floor, Suite B
Aberdeen Proving Ground, MD 21005-5001

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: **MD20240418-0265**
Reviewer Comments Due By: May 15, 2024
Project Description: Early Input for the Draft Programmatic Environmental Assessment: Proposed Action is for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to Continue Performing Mission-Related Activities at the MRICD Campus Over the Next 5 to 7 Years at Aberdeen Proving Ground
Project Address: 8350 Ricketts Point Road, Gunpowder, MD 21010
Project Location: Harford County
Clearinghouse Contact: Sylvia Mosser

Dear Mr. O'Sullivan:

Thank you for submitting your project for intergovernmental review. Participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps ensure project consistency with plans, programs, and objectives of State agencies and local governments. MIRC enhances opportunities for approval and/or funding and minimizes delays by resolving issues before project implementation.

Maryland Gubernatorial Executive Order 01.01.1998.04, Smart Growth and Neighborhood Conservation Policy, encourages federal agencies to adopt flexible standards that support "Smart Growth." In addition, Federal Executive Order 12072, Federal Space Management, directs federal agencies to locate facilities in urban areas. Consideration of these two Orders should be taken prior to making final site selections. A copy of Maryland Gubernatorial Executive Order 01.01.1998.04, Smart Growth and Neighborhood Conservation Policy is available upon request.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Departments of Natural Resources, the Environment, Transportation, and General Services; the Maryland Military Department; Harford County; and the Maryland Department of Planning, including the Maryland

Historical Trust. A composite review and recommendation letter will be sent to you by the reply due date. Your project has been assigned a unique State Application Identifier that you should use on all documents and correspondence. Please be assured that we will expeditiously process your project.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at sylvia.mosser@maryland.gov. Thank you for your cooperation with the MIRC process.

Sincerely,

Jason Dubow, Manager
Resource Conservation and Management

JD:SM

24-0265_NFP.NEW.docx

From: Lori Byrne -DNR- <lori.byrne@maryland.gov>
Sent: Monday, May 6, 2024 10:36 AM
To: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Cc: Claudia Jones -DNR- <claudia.jones@maryland.gov>
Subject: Re: Agency coordination regarding the Environmental Assessment for

Dear Mr. O'Sullivan,
Please see attached for our response to your review request. Thank you.
Lori Byrne

dnr.maryland.gov

Lori A. Byrne
Environmental Review Coordinator
Wildlife and Heritage Service
Department of Natural Resources
580 Taylor Avenue, E-1
Annapolis, MD 21401
410-260-8573 (office)
410-260-8596 (FAX)
lori.byrne@maryland.gov

On Wed, Apr 17, 2024 at 11:19 AM O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil> wrote:

Greetings

The U.S. Army Garrison Aberdeen Proving Ground would like to coordinate with your agency regarding a National Environmental Policy Act analysis for the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground – Edgewood Area

The Proposed Action is for the USAMRICD to continue performing mission-related activities at the USAMRICD campus over the next 5 to 7 years. This PEA examines potential on- and off-site impacts from USAMRICD training/education; medical research/development; consultation/collaboration; and potential facility improvement activities planned to occur over the next 5 to 7 years. This input will be considered and incorporated into the preparation of the National Environmental Policy Act analysis.

Further details concerning USAMRICD may be found at the following link:
https://usamricd.health.mil/Pages/default.aspx

V/r

ARNOLD O'SULLIVAN
Directorate of Public Works
Environmental Division
Office: 410-306-2731
Cell Phone: 410-322-6630
FAX: 410-306-2252

May 6, 2024

Mr. Arnold V. O'Sullivan
USAGAPG/Dept. of the Army IMAP-PWE
4304 Rodman Road
3rd Floor, Suite B
APG, MD 21005-5001

RE: Environmental Review for EA for U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground - Edgewood Area, Baltimore and Harford Counties, Maryland.

Dear Mr. O'Sullivan:

The Wildlife and Heritage Service has determined that there are the following areas of potential concern for impacts to rare, threatened and endangered plants and animals, and protected habitats:

Carroll Island
There are records for the following rare, threatened or endangered species documented on Carroll Island, which is designated as Baltimore County Listed Species Site BA L-02:

Scientific Name	Common Name	State Status
Iris prismatica	Slender Blueflag	Endangered
Eleocharis rostellata	Beaked Spikerush	Rare
Scutellaria galericulata	Hooded Skullcap	Rare
Juncus torreyi	Torrey's Rush	Endangered
Circus hudsonius	Northern Harrier	In Need of Conservation
Laterallus jamaicensis	Black Rail	Endangered, also federally listed

Battery Point
The Wildlife and Heritage Service has no records for rare, threatened or endangered plants or animals.

Pooles Island
There is a great blue heron colony documented on Pooles Island. Conservation of Great Blue Heron colonies that are located in the Chesapeake Bay Critical Area is required by state law. Significant mortality of chicks or eggs resulting from disturbance of the colony during the breeding season is a violation of the U.S. Migratory Bird Treaty Act. We encourage protection and conservation by implementing the following guidelines:

1. Establish a protection area of 660-foot radius from the colony's outer boundary. Within this area establish two zones of protection: Zone 1 extends from the outer boundary of the colony to a radius of 330 feet, Zone 2 extends from 330 feet to 660 feet in radius.
2. During the breeding season, 15 February through 31 July, all human entry into Zone 1 should be restricted to only that essential for protection of the Great Blue Heron colony. Human disturbance of colony sites that results in significant mortality of eggs and/or chicks is considered a prohibited taking under various state and federal regulations.

3. No land use changes, including development or timber harvesting, should occur in Zone 1.
4. Construction activities, including clearing, grading, building, etc., should not occur within Zones 1 and 2.
5. Selective timber harvesting may occur in Zone 2, but clearcutting should be avoided.

Edgewood Area

There is a Listed Species Site HA L-22, known as Robins Point, which supports an occurrence of the Slender Blueflag. In addition, there are records for:

Scientific Name	Common Name	State Status
Rhynchospora recognita	Cymose Beakrush	Rare
Ceratophyllum echinatum	Prickly Hornwort	Rare
Bidens bidentoides	Maryland Bur-marigold	Tracked Watchlist
Sagittaria spatulata	Spongy Arrowhead	Rare

Also, our remote analysis suggests that the forested area on this property contains Forest Interior Dwelling Bird habitat. Populations of many bird species which depend on this type of forested habitat are declining in Maryland and throughout the eastern United States. The conservation of this habitat is mandated within the Chesapeake Bay Critical Area. The Critical Area Commission's document "A Guide to the Conservation of Forest Interior Dwelling Birds in the Chesapeake Bay Critical Area" provides details on development standards and information about mitigation for projects where impacts to FIDS habitat cannot be totally avoided. Mitigation plantings for impacts to FIDS habitat may be required under the local government's Critical Area Program.

In addition, the open waters of the Gunpowder River that are adjacent to or part of the site are known historic waterfowl concentration areas. If there is to be any construction of water-dependent facilities we often recommend a time-of-year restriction to avoid disturbing wintering waterfowl.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at lori.byrne@maryland.gov or at (410) 260-8573.

Sincerely,

Lori A. Byrne

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

ER# 2024.0593.baha
Cc: C. Jones, CAC

From: Dixie Henry -MDP- <dixie.henry@maryland.gov>
Sent: Friday, May 10, 2024 11:26 AM
To: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Subject: MD SHPO - preliminary comments on USAMRICD Mission Activities at APG - Edgewood Area

Thank you for providing the Maryland Historical Trust (the MD SHPO) with the notification regarding the above-referenced undertaking.

It is our understanding that the Army is seeking preliminary input and coordination on the Programmatic Environmental Assessment (PEA) for the continuation of mission-related activities at the U.S. Army
Medical Research Institute of Chemical Defense (USAMIRCD) campus over the next 5-7 years. The PEA will examine potential on- and off-site impacts to the natural and human environment from a variety
of activities that will be involved in this project (including potential facility improvement activities), and agency input will be considered and incorporated into the preparation of the PEA. Below are our
preliminary comments in response to the Army's request for coordination.

The U.S. Army Garrison Aberdeen Proving Ground - Edgewood Area includes a variety of inventoried cultural resources such as early 20th century officers' quarters and dozens of prehistoric
archeological sites located along the Gunpowder and Bush Rivers. The PEA will need to consider the project's potential impacts to historic properties and explore alternatives to avoid, minimize
or mitigate any adverse effects on significant resources in accordance with Section 106 of the National Historic Preservation Act . As the MD SHPO, MHT will, of course, assist the Army in these efforts
to assess the on- and off-site impacts on historic properties (including archeological resources), and we look forward to further consultation with the Army as project planning and the development of the
PEA proceed.

Thank you for providing us with this opportunity to comment and provide early input on this Proposed Action. Please let us know if you have any questions or need further information at this time.

- Dixie Henry

Dixie L. Henry, Ph.D.

Preservation Officer, Project Review and Compliance

Maryland Historical Trust

Maryland Department of Planning

100 Community Place

Crownsville, MD 21032

dixie.henry@maryland.gov/ 410-697-9553

mht.maryland.gov

To check on the status of a project submittal, please use our online search: https://apps.mht.maryland.gov/compliancelog/ComplianceLogSearch.aspx **.**

From: sylvia.mosser@maryland.gov <sylvia.mosser@maryland.gov>
Sent: Friday, May 17, 2024 4:53 PM
To: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Cc: sylvia.mosser@maryland.gov
Subject: Review and Recommendation of Clearinghouse Project: MD20240418-0265

Hello Mr. Arnold O'Sullivan,

The following link below includes the State Clearinghouse Review and Recommendation letter for your project, Early Input for the Draft Programmatic Environmental Assessment: Proposed Action is for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to Continue Performing Mission-Related Activities at the MRICD Campus Over the Next 5 to 7 Years at Aberdeen Proving Ground.

Click this link to view the letter,
https://apps.planning.maryland.gov/EMIRC_Files/MD20240418-0265.zip . This is a 2 MB file.

Thank you.

Sylvia Mosser, Planner
sylvia.mosser@maryland.gov
410-767-4487

Jason Dubow, Unit Manager
jason.dubow@maryland.gov
410-767-3370
Please take our customer service survey.

May 17, 2024

Mr. Arnold O'Sullivan, Directorate of Public Works, Environmental Division
U.S. Army Garrison, Aberdeen Proving Ground
IMAP-PWE
4304 Susquehanna Avenue
3rd Floor, Suite B
Aberdeen Proving Ground, MD 21005-5001

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20240418-0265
Applicant: U.S. Army Garrison, Aberdeen Proving Ground
Project Description: Early Input for the Draft Programmatic Environmental Assessment: Proposed Action is for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to Continue Performing Mission-Related Activities at the MRICD Campus Over the Next 5 to 7 Years at Aberdeen Proving Ground
Project Address: 8350 Ricketts Point Road, Gunpowder, MD 21010
Project Location: Harford County
Recommendation: **Consistent with Qualifying Comments and Contingent Upon Certain Actions**

Dear Mr. O'Sullivan:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.02.04-.07, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation. This recommendation is valid for a period of three years from the date of this letter.

Review comments were requested from the Maryland Departments of General Services, Natural Resources, Transportation, and the Environment; Maryland Military Department; Harford County; and the Maryland Department of Planning, including the Maryland Historical Trust. The Maryland Departments of General Services, and Natural Resources; Maryland Military Department; and the Maryland Department of Planning did not have comments.

The Maryland Department of Transportation and Harford County found this project to be consistent with their plans, programs, and objectives.

The Maryland Department of the Environment found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments, which are enclosed.

The Maryland Historical Trust (MHT) stated that their finding of consistency is contingent upon the applicant's completion of the review process required under Section 106 of the National Historic Preservation Act, as follows:

> "MHT is consulting directly with the Army to fulfill all state and federal historic preservation requirements for this undertaking. The U.S. Army Garrison Aberdeen Proving Ground - Edgewood Area includes a variety of inventoried cultural resources such as early 20th century officers' quarters and dozens of prehistoric archeological sites located along the Gunpowder and Bush Rivers. The PEA will need to consider the project's potential impacts to historic properties and explore alternatives to avoid, minimize or mitigate any adverse effects on significant resources in accordance with Section 106 of the National Historic Preservation Act . As the MD SHPO, assist the Army in these efforts to assess the on- and off-site impacts on historic properties (including archeological resources), and we look forward to further consultation with the Army as project planning and the development of the PEA proceed. (DLH - 202401919)"

The State Application Identifier Number must be placed on any correspondence pertaining to this project. The State Clearinghouse must be kept informed if the approving authority cannot accommodate the recommendation.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at sylvia.mosser@maryland.gov.

Thank you for your cooperation with the MIRC process.

Sincerely,

Jason Dubow, Manager
Resource Conservation and Management

MB:SM
Enclosure—MDE Comments
cc:

Tony Redman - DNR	Tyson Byrne - MDOT	Taylor Bensley - MILT	Joseph Griffiths - MDPL
Karl Munder - MDE	Damon Conway - DGS	Jennifer Freeman - HRFD	Beth Cole - MHT

24-0265_CRR.CLS.docx

MDE Comments for Environmental Clearinghouse Project MD20240418-0265

Response Code: R-1

1. If the applicant suspects that asbestos is present in any portion of the structure that will be renovated/demolished, then the applicant should contact the Community Environmental Services Program, Air and Radiation Management Administration at (410) 537-3215 to learn about the State's requirements for asbestos handling.

2. Construction, renovation and/or demolition of buildings and roadways must be performed in conformance with State regulations pertaining to "Particulate Matter from Materials Handling and Construction" (COMAR 26.11.06.03D), requiring that during any construction and/or demolition work, reasonable precaution must be taken to prevent particulate matter, such as fugitive dust, from becoming airborne.

3. In Maryland, there are specific performance standards and/or emission rates which must be met when installing boilers or other equipment capable of producing emissions. Prior to installing any of this type equipment, the applicant is requested to obtain a construction and/or operating permit from MDE's Air and Radiation Management Administration. In addition, a review for toxic air pollutants may need to be performed. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements and the permitting processes for such equipment.

4. If medical wastes will be incinerated, a permit to construct and a permit to operate the incinerator must be obtained from MDE's Air and Radiation Management Administration. The applicant should contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements and the permitting processes for incinerator permits.

5. During the duration of the project, soil excavation/grading/site work will be performed; there is a potential for encountering soil contamination. If soil contamination is present, a permit for soil remediation is required from MDE's Air and Radiation Management Administration. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements for these permits.

6. All x-ray machine facilities in the State of Maryland must be registered, and certain types of machines must also be certified. Please contact Ms. Eva Nair, Chief, Radiation Machines Division, Radiological Health Program, Air and Radiation Management Administration at (410) 537-3193 for additional information.

7. Any person or institution that wants to acquire or use radioactive materials is required to possess a license. Please contact the Radioactive Materials Licensing and Compliance Division,

Radiological Health Program, Air and Radiation Management Administration at (410) 537-3300 for additional information.

8. If a project receives federal funding, approvals and/or permits, and will be located in a nonattainment area or maintenance area for ozone or carbon monoxide, the applicant needs to determine whether emissions from the project will exceed the thresholds identified in the federal rule on general conformity. If the project emissions will be greater than 25 tons per year, contact the Air Quality Planning Program of the Air and Radiation Administration, at (410) 537-4125 for further information regarding threshold limits.

9. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land and Materials Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.

10. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.

11. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Resource Management Program at (410) 537-3314 for additional information regarding recycling activities.

12. The Solid Waste Program should be contacted directly at (410) 537-3315 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.

13. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For specific information about these programs and eligibility, please Land Restoration Program at (410) 537-3437.

MDE Comments for Environmental Clearinghouse Project MD20240418-0265

14. Borrow areas used to provide clean earth back fill material may require a surface mine permit. Disposal of excess cut material at a surface mine may requires site approval. Contact the Mining Program at (410) 537-3557 for further details.

Early Input for the Draft Programmatic Environmental Assessment: Proposed Action is for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to Continue Performing Mission-Related Activities at the MRICD Campus Over the Next 5 to 7 Years at Aberdeen Proving Ground, Harford County

Maryland Department of the Environment – WSA/WPRPP

REVIEW FINDING: **R1 Consistent with Qualifying Comments (MD20240418-0265)**

Please be advised, the property in MD20240418-0265 is in close proximity to Flood Zone AE (100-year Floodplain) and X (500-year Floodplain). The project coordinator(s) should follow local floodplain ordinances and Federal Emergency Management Agency's guidelines and standards.

It is advised that the coordinator(s) consider climate resiliency, which could include but not limited to the following steps (https://toolkit.climate.gov/):

- Explore Hazards: Identify climate and non-climate stressors, threats, and hazards and how they could affect assets (people and infrastructure).
- Assess vulnerability and risks: Evaluate assets vulnerability and estimate the risk to each asset.
- Investigate options: Consider possible solutions for your highest risks, check how others have responded to similar issues, and reduce your list to feasible actions.
- Prioritize and plan: Evaluate costs, benefits, and capacity to accomplish each action integrating the highest value actions into a stepwise plan.
- Take action: Move forward with your plan and check to see if your actions are increasing your resilience with monitoring.

The coordinator(s) is advised to contact Dave Guignet, State National Flood Insurance Program Coordinator, of MDE's Stormwater, Dam Safety, and Flood Management Program, at (410) 537-3775 for additional information regarding the regulatory requirements for Floodplains and Storm Surges.

The coordinator(s) is advised to contact Matthew C. Rowe, CC-P, Deputy Director of MDE's Water and Science Administration, at (410) 537-3578 for additional information regarding Climate Change and Resiliency.

From: Traver, Carrie <Traver.Carrie@epa.gov>
Sent: Monday, May 20, 2024 5:25 PM
To: O'Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA) <arnold.v.osullivan.civ@army.mil>
Cc: Witman, Timothy <witman.timothy@epa.gov>
Subject: U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground – Edgewood Area

Good evening Arnold:

Thank you for coordinating. EPA is not providing specific scoping comments for the continuation of mission-related activities at the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD) Mission Activities at Aberdeen Proving Ground Programmatic Environmental Assessment (PEA). However, please note that the Council on Environmental Quality (CEQ) published guidance to assist federal agencies in assessing and disclosing climate change impacts during environmental reviews on January 9, 2023. https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate CEQ indicated that agencies should use this interim guidance to inform the NEPA review for proposed actions. EPA recommends the Army apply the guidance as appropriate to ensure robust consideration of potential climate impacts, mitigation, and adaptation.

I request that you forward the PEA or link to me by email when it is available. If you would like to discuss any aspects of the proposal or NEPA analysis, I'd be happy to talk with you.

Have a great week!
Carrie

Carrie Traver
NEPA Branch
EJ, Community Health, & Environmental Review Division
U.S. Environmental Protection Agency, Region 3
215-814-2772
traver.carrie@epa.gov

DEPARTMENT OF THE ARMY
U.S. ARMY INSTALLATION MANAGEMENT COMMAND
U.S. ARMY GARRISON ABERDEEN PROVING GROUND
BUILDING 4510, 6429 BOOTHBY HILL AVENUE
ABERDEEN PROVING GROUND MARYLAND 21005-5001

March 7, 2025

SUBJECT: Initiation of Section 106 Consultation for a New Proposed Undertaking, U.S. Army Medical Research Institute of Chemical Defense (MRICD), Aberdeen Proving Ground, Maryland

Dixie Henry
Project Review and Compliance
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032

Dear Ms. Henry:

U.S. Army Garrison Aberdeen Proving Ground (APG) is writing to initiate consultation with you in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. § 470f), and its implementing regulations, 36 C.F.R. Part 800, for a new proposed undertaking by U.S. Army Medical Research Institute of Chemical Defense (MRICD) at APG-Edgewood Area (EA), Harford County, Maryland.

The Proposed Undertaking: As defined by 36CFR Part 800, the Proposed Undertaking is for the MRICD to continue performing mission-related activities at the MRICD facility located on APG-EA over the next five to seven years. As future specific projects/undertakings are proposed outside of the day-to-day mission related tasks that could have potential effects on historic properties, additional Section 106 consultation will be initiated with your office at that time.

Area of Potential Effect (APE): The APE has been defined as the MRICD facility, which is a 34.5-acre campus in the APG-EA. The campus includes approximately 3.5-acres of asphalt parking areas; 3 small buildings for maintenance administration and training activities; a fuel storage area; a 526,000 square foot facility that houses specialized laboratory spaces, a large vivarium, administrative support areas, an auditorium, a medical library and training lab, utility spaces, and materials receiving and shipping areas; and a central utility plant. In addition, there is a 1-acre field training site east of the main campus consisting of a covered pavilion, combined classroom/storage facility, and a small outdoor classroom/training area. *[Please note, given the confidential nature of the APG-EA, only the general location of the APE is provided on the figure in Enclosure 1. Also, no photographs of the APE are included at this time.]*

Identification Historic Properties: MRICD has taken steps to identify historic properties within the APE. The APG-EA study area depicted on Figure 1 (Enclosure 1) was reviewed for previously recorded cultural resources and surveys using MHT's Medusa. Within this study area, two National Register of Historic Places (NRHP) properties, 26 Determination of Eligibility (DOE) forms, 59 architectural and historical resources, 29 archaeological sites, 13 archaeological quad map files, and 8 archaeological surveys have been recorded. Of these known cultural resources and surveys, 3 DOE forms, 2 architectural resources, and 1 archaeological survey are within the APE.

Architectural Resources within APE (Table 1)
DOE forms have been completed for Building E3109 (DOE-HA-0019), Building E3103 (DOE-HA-0165) and Building E3106 (DOE-HA-0166). Building E3109 (built in 2001) and Building E3103 (constructed in 1992) were general instruction buildings (or classrooms) for the MRICD. Building E3106 was constructed in 1995 as a general purpose and administrative space for the MRICD. All three resources were determined not eligible for listing in the NRHP by the MHT in 2009.

The two architectural resources are HA-1856 and HA-2074. HA-1856 corresponds with two water well pumphouses constructed during World War II. On the inventory form for HA-1856, this resource was recommended not eligible for listing in the NRHP. HA-2074 corresponds with the Fort Hoyle non-commissioned officers' quarters on Chevron Drive. Constructed in the 1930s, this housing complex consisted of 11 brick dwellings and 3 brick garages; it was recommended eligible by the MHT as a historic district in 2007. HA-2074 is no longer extant and was demolished following a Memorandum of Agreement between APG and MHT signed in September 2008.

Archaeological Survey within APE (Table 2)
The one archaeological survey (HA 109) was conducted in 2009 by R. Christopher Goodwin & Associates, Inc. The archaeological survey was conducted on behalf of the MRICD within portions of the APE.

NEPA: The U.S. Army Garrison Aberdeen Proving Ground (APG) has also prepared a draft Programmatic Environmental Assessment (PEA) in accordance with the National Environmental Policy Act of 1969 (42 United States Code Section 4321 et seq.), herein known as NEPA. This PEA will be going out for public review on 18 March 2025. The PEA examines potential on- and off-site impacts from MRICD's ongoing mission activities: training/education; medical research/development; consultation/collaboration; and potential facility improvement activities.

Assessment of Effects: The U.S. Army has sought to avoid potential effects to historic properties. No known historic properties are adversely impacted by current MRICD mission related activities within the APE. If future specific projects/undertakings are proposed outside of the day-to-day mission related tasks that could have potential effects on historic properties, additional Section 106 consultation will be initiated with your office at that time.

APG has determined that the proposed undertaking will have no adverse effect on historic properties. APG is seeking your concurrence with its effect determination and appreciates your review and comments on the proposed undertaking. Questions and comments regarding this undertaking may directed to Mark Gallihue, Cultural Resources Program Manager, at mark.t.gallihue.civ@army.mil. Thank you for your support.

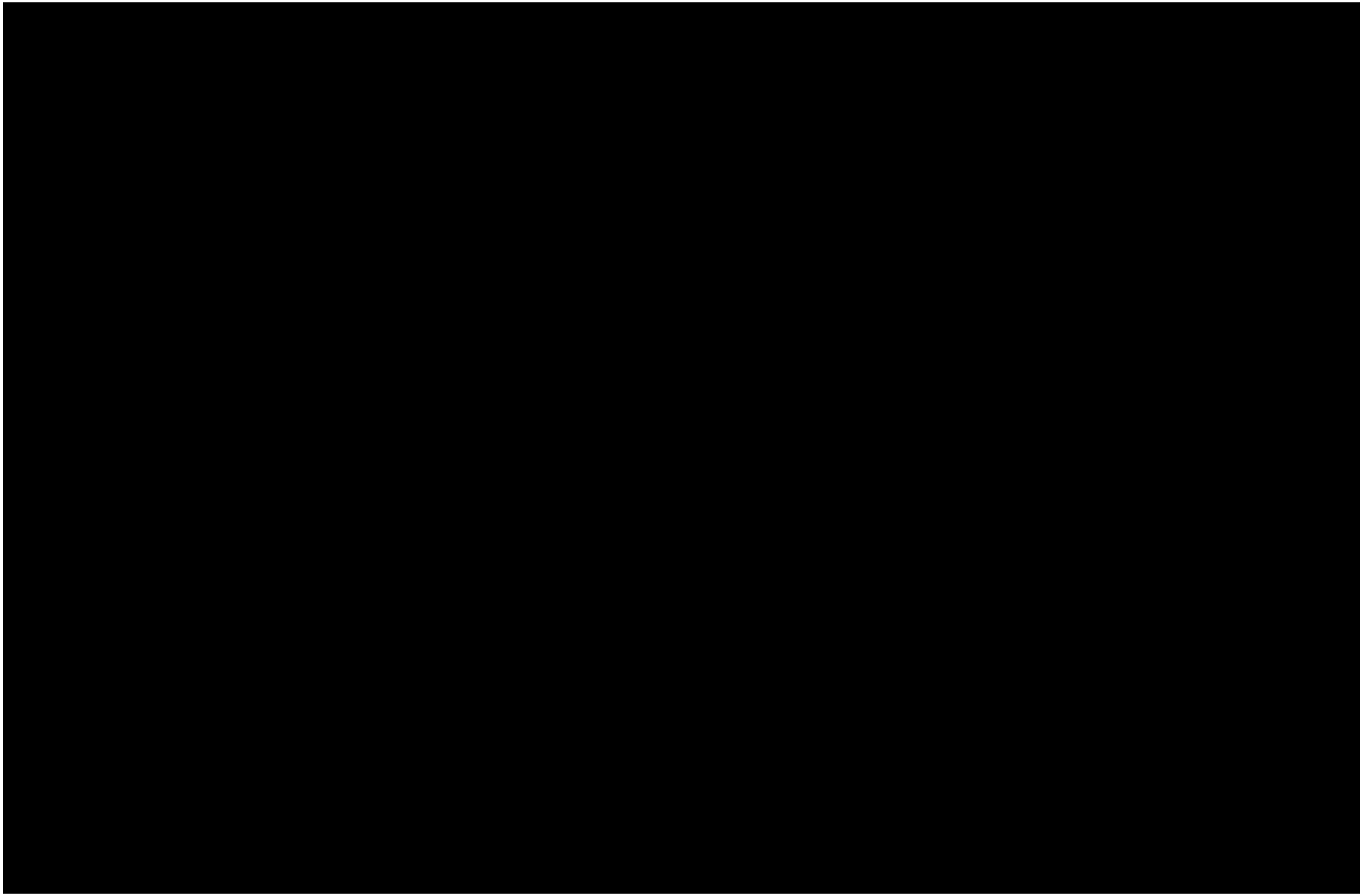
Sincerely,

Vance G. Hobbs
Chief, Environmental Division
Directorate of Public Works

Enclosures

-Enclosure 1-

Figure 1. Site Location on Medusa.



-Enclosure 2-

Table 1. Summary of Architectural Resources within APE.

Type	Identification Number	Year Built	Description	NRHP Status	MHT Concurrence Date
DOE forms	Building E3109 (DOE-HA-0019)	2001	General instruction building	Not Eligible	2009
DOE forms	Building E3103 (DOE-HA-0165)	1992	General instruction building	Not Eligible	2009
DOE forms	Building E3106 (DOE-HA-0166)	1995	General purpose and administrative space	Not Eligible	2009
Maryland Inventory of Historic Properties	HA-1856	circa 1941	Two water well pumphouses constructed during World War II	Recommended Not Eligible	No information within Medusa as to whether the MHT concurred with this finding or not
Maryland Inventory of Historic Properties	HA-2074	1930s	Fort Hoyle non-commissioned officers' quarters	Recommended eligible for historic district	2007, Demolished

Table 2. Summary of Archaeological Survey within APE.

Type	Survey Number	Description	NRHP Status	MHT Concurrence Date
Archaeological Survey	HA 109	Phase I Archeological Survey at the Proposed U.S. Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground-Edgewood Area, Harford County, Maryland	NA	NA

From: Maryland Historical Trust
To: O"Sullivan, Arnold Victor JR CIV USARMY ID-SUSTAINMENT (USA)
Subject: MHT e106 project submittal - Accepted
Date: Tuesday, March 11, 2025 10:57:47 AM

The Maryland Historical Trust e106 system accepted the following project review submittal and added it to the system for review:

Project Name:	MD20240418-0265 Draft Programmatic Environmental Assessment U.S. Army Medical Research Institute of Chemical Defense (MRICD)
Agency:	Army
Date Received:	March 11, 2025
MHT Log Number:	202501497

Thank you for your MHT e106 submittal. Upon completion of the MHT review, you will receive an email with MHT's review findings. MHT review typically concludes within 30 days of receiving a complete submittal. Please use your online Compliance Log Dashboard to track project review status.

Maryland Historical Trust
Project Review and Compliance
100 Community Place
Crownsville, MD 21032
mht.section106@maryland.gov

MHT.Maryland.gov
Planning.Maryland.gov

Notice of Availability of Draft Programmatic Environmental Assessment and Draft Finding of No Significant Impact

Programmatic Environmental Assessment for U.S. Army Medical Research Institute of Chemical Defense (MRICD) Mission Activities at Aberdeen Proving Ground, Maryland

All Interested Parties: Interested parties are hereby notified that Aberdeen Proving Ground has prepared a Draft Programmatic Environmental Assessment (PEA) and Draft Finding of No Significant Impact (FNSI) pursuant to the provisions of the National Environmental Policy Act of 1969 (NEPA) and 32 CFR § 651, as amended, "Environmental Analysis of Army Actions".

The Draft PEA was prepared to address the potential environmental consequences of MRICD performing ongoing and future medical chemical countermeasures research/development and education/training on Aberdeen Proving Ground – Edgewood Area over the next 5 to 7 years. The PEA analyzes two alternatives including the No Action Alternative. The Proposed Action is comprised of a number of training and educational activities, medical research and development, consultation activities, and facility improvements that are planned to continue over a multi-year period (5 to 7 years). The activities comprised within the definition of the Proposed Action are a continuation of the current activities taking place within the MRICD facility and additional facility improvements.

The PEA is incorporated by reference in the Draft FNSI. Based on the PEA, the Army has determined that implementing the Proposed Action would have no significant adverse impacts on the human or natural environment. Therefore, at the conclusion of the public comment period, it is anticipated that a FNSI would be appropriate and would be signed for the Proposed Action. An Environmental Impact Statement, therefore, is not deemed necessary to implement the Proposed Action.

The draft PEA and draft FNSI are available for review and comment from publication of this notice until 1 April 2025. The document can be viewed on APG's website under the "Notices" column at: https://home.army.mil/apg/about/installation-policies. Hard copies of the document can be reviewed at the Harford County Public Library, Aberdeen Branch, 21 Franklin Street, Aberdeen, MD; and the Harford County Public Library, Edgewood Branch, 629 Edgewood Road, Edgewood, MD. Interested parties are invited to submit written comments for consideration by 1 April 2025 to: United States Army Garrison, Aberdeen Proving Ground, Directorate of Public Works, Environmental Division, Attn: Mr. Arnold O'Sullivan, Building 4304, 6504 Rodman Road, Aberdeen Proving Ground, MD 21005; or send via e-mail to: arnold.v.osullivan.civ@army.mil. Please reference "MRICD Missions PEA" in all correspondence.

APPENDIX B: Coastal Zone Management Act Federal Consistency Determination

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Determination of Consistency with Maryland's Coastal Zone Management Program

In accordance with Section 307 of the Coastal Zone Management Act of 1972 (CZMA) as amended, this document serves as a Federal Consistency Determination for the U.S. Army Medical Research Institute of Chemical Defense (MRICD) to continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and chemical casualty care education/training activities in Aberdeen Proving Ground's Edgewood Area (APG-EA).

Aberdeen Proving Ground (APG) occupies approximately 72,283 acres of land and water in the northwestern reaches of the Chesapeake Bay. The Bush River divides the installation into two non-contiguous areas: to the east is the Aberdeen Area (APG-AA) encompassing 29,843 acres, and to the west is the Edgewood Area (APG-EA) encompassing 11,731 acres. Contiguous waters of APG account for an additional 30,276 acres. Other off-site areas of APG, not attached to the main installation, account for the remaining acreage. These include the Churchville Test Area, Van Bibber Water Treatment Plant (WTP), Atkisson Reservoir and Dam, and Pooles Island in Harford County; Carroll Island and Graces Quarters in Baltimore County; Eastern Shore Towers in Kent County; Adelphi Laboratory Center (ALC) in Montgomery and Prince George's Counties; and Blossom Point Research Facility (BPRF) in Charles County, Maryland.

The MRICD campus is approximately 20 acres located in APG-EA and includes approximately 3.5 acres of asphalt parking areas, 3 small buildings for maintenance administration and training activities, and a 526,000-square-foot facility that houses specialized laboratory spaces, a large vivarium, administrative support areas, auditorium, medical library and training lab, utility spaces, and materials receiving and shipping areas. In addition, there is a 1-acre field training site consisting of a covered pavilion, combined classroom/storage facility, and a small outdoor classroom/training area. As MRICD continues to develop medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation, the Army project management team will examine each action to ensure the environmental ramifications are within the scope of the Proposed Action and analysis of the PEA and this Federal Consistency Determination. Due to the lack of complexity from issues and variables involved in the continuation of MRICD's mission-related activities, it is anticipated that a Record of Environmental Consideration (REC) from this PEA will be prepared for each associated project that is initiated.

Maryland's Coastal Zone Management Program (CZMP) was established by executive order and approved in 1978 as required by the Federal CZMA of 1972, as amended. Maryland's Coastal Zone consists of land, water, and sub-aqueous land between the territorial limits of Maryland (including the towns, cities, and counties that contain coastal shoreline) in the Chesapeake Bay, Atlantic coastal bays, and the Atlantic Ocean. The entirety of APG is situated within the Maryland Coastal Zone.
The CZMA requires that Federal actions likely to affect land, water, or natural resources in the Coastal Zone be conducted in a manner consistent to the maximum extent practicable with the enforceable policies of a state's federally approved CZMP. The Coastal Zone Act Reauthorization Amendments of 1990 also clarified that coastal effects include cumulative, secondary, or indirect effects of the activity in the immediate or reasonably foreseeable future.

The Army is required to determine the consistency of MRICD's proposed continuation of performing mission-related activities at the MRICD facility located on APG-EA over the next 5 to

7 years with the CZMP policies, and the potential for effects on Maryland's coastal resources or coastal uses with the CZMP. The Army determined that implementation of the Proposed Action would ultimately not impact the land, water, or natural resources of Maryland's Coastal Zone. This document represents an analysis of Maryland's CZMP Enforceable Coastal Policies (MDNR, 2011) and reflects the commitment of the Army to comply with the Maryland CZMP.

Description of the Proposed Action

The purpose of the Proposed Action is for MRICD to continue to develop medical countermeasures for chemical, biochemical, and other non-kinetic threats to U.S. warfighters and the Nation.

The Proposed Action is needed to protect U.S. warfighters and the Nation from proliferating chemical, biochemical, and other non-kinetic threats. Prior environmental analysis of MRICD medical chemical research/development and chemical casualty care training conducted in 2004 (U.S. Army Medical Research and Material Command [USAMRMC]) is almost 20 years old. While much of the analysis done at the time is still pertinent, the scope of MRICD research programs has broadened to address newer and/or changing threats that have arisen since that time. Subsequent analysis done in 2007 for the construction of current MRICD campus completed in 2014, was limited to the impacts posed by facility construction and did not address those linked with mission activities.

The Proposed Action may require a review under existing Title V air permits maintained at APG. Compliance with the existing Controlled Hazardous Substance (CHS) permit may also be required. Although new construction activities are not anticipated under the Proposed Action, any required construction-related permits or approvals for facility improvements would be obtained by APG as needed prior to the start of construction.

Public Participation

The PEA serves as the primary document to facilitate environmental review of the Proposed Action by federal, state and local agencies and the public. Agency consultation is currently being performed as the PEA and a draft Finding of No Significant Impact (FNSI) were submitted for review by state and county agencies through the Maryland State Clearinghouse. Public participation opportunities with respect to the PEA and decision making on the Proposed Action are guided by 32 Code of Federal Regulations (CFR) Part 651. The PEA will be made available to the public for 30 days, along with a draft FNSI. Any comments or responses will be addressed prior to the final PEA. If there are no significant impacts, APG will sign a FNSI and will proceed with implementation of the Proposed Action. If there are significant impacts, the Army will publish a Notice of Intent (NOI) to prepare a Programmatic Environmental Impact Statement (PEIS).

A. CORE POLICIES

1. **Quality of Life** (Relevant policies are detailed below; Not Relevant Policies: 3-11)

    1. Air Quality: Under the Proposed Action, minimal air emissions are expected to occur due to vehicular traffic and the use of fuel combustion sources during facility

improvements such as the Non-kinetic Threats Lab upgrades and Fuel Storage Compliance upgrades. Aside from facility improvements, the Proposed Action also includes training and education activities, medical research and development activities, and consultation activities. The proposed training activities include use of utility vehicles (UTVs) four times a month for a duration of one hour. The fuel combustion emissions from the UTV use are minimal. Therefore, the overall emissions of criterial pollutants from the Proposed Action are believed to be below *de minimis* levels for General Conformity.

The Proposed Action would result in short-term, localized changes to air quality as a result of fuel combustion emissions from the combustion equipment. The Proposed Action would comply with state, federal, and current DoD regulations designed to support compliance with Clean Air Act (CAA). Therefore, implementation of the Proposed Action would not result in significant impacts to air quality and climate change.

2. Noise: Under the Proposed Action short-term, minor, negative effects are expected to occur throughout construction activities associated with facility improvements such as the Non-Kinetic Threats Lab upgrades and Fuel Storage Compliance upgrades. Noise due to construction activities will vary depending on the construction method, the types of construction equipment employed, the amount of each type of construction equipment, and the duration of construction equipment use. Heavy equipment produces the greatest amount of noise disturbances and should be of special concern. Noise levels under the Proposed Action are expected to be consistent with operations at a military post and are not expected to exceed the threshold limit values outlined in APG's Installation Compatible Use Zone (ICUZ). Most of the facility improvements and renovations would be indoors and, as such, would not impact outdoor/offsite receptors. Delivery trucks and heavy machinery at the facility improvement sites would generate noise that could affect personnel in sensitive noise areas; however, the impact would be short-term, temporary, and localized. If the proposed construction sites are within 800 feet of a noise sensitive receptor, mitigation efforts could include limiting the Proposed Action activities to weekday business hours to minimize off-post noise.

2. **Waste & Debris Management** (Relevant policies are detailed below; Not Relevant Policies: 2)

1. Hazardous Waste Management: APG operates Hazardous Materials and Hazardous Waste Management Programs that set forth procedures for handling and tracking hazardous materials from receipt through use, waste generation, and disposal. The Hazardous Materials Management Program includes procedures for maintaining inventory data and for procuring, receiving, and tracking hazardous materials. All hazardous materials needed during construction and demolition activities (i.e., diesel fuel) would be properly stored with secondary containment, as required. All generated hazardous wastes will be disposed of via authorized contractors at appropriately permitted hazardous waste treatment, storage, and disposal facilities. Any spills would be cleaned up appropriately, in accordance with the Spill Prevention, Contingencies,

and Countermeasures Plan (SPCCP). It is not anticipated that activities associated with the Proposed Action would involve the use or disposal of hazardous, toxic, and/or radioactive substances. The continued use and disposal of hazardous, toxic, and/or radioactive substances would be subject to all required regulations, requirements, and contingency plans as stated previously, and no ground excavation is planned or anticipated as part of the Proposed Action. Therefore, it is not anticipated that contaminated soils, contaminated groundwater, or UXO would be encountered. It is also anticipated that no impacts associated with hazardous, toxic, or radioactive substances would result from the implementation of the Proposed Action.

3. **Water Resources Protection & Management** (Relevant policies are detailed below; Not Relevant Policies: 1-8, 10-12)

    9. Unpermitted Dumping of Used Oil: The potential exists for storage of minor amounts of fuel to maintain and fuel equipment and vehicles; these areas would have primary and secondary containment measures. Hazardous materials and waste generated would be disposed of in accordance with the Hazardous Waste Management Plan (HWMP) and in accordance with federal regulations.

4. **Flood Hazards & Community Resilience:** (Relevant policies are detailed below; Not Relevant Policies: 1, 3)

    2. Non-Tidal Waters and Non-Tidal Floodplains: Non-tidal floodplains occur within a portion of the MRICD site; however, no facility modifications are planned within the floodplain. Planning for proposed upgrade and associated work will take into consideration the location of the 1% annual chance floodplain and it will be incorporated into the planning of each project. Measures will be taken to avoid these areas or minimize impacts wherever possible.

    In the event that new facilities are proposed to be located within the 1% annual chance non-tidal floodplains, these facilities will be designed and constructed to provide a minimum of 1 foot of freeboard above the base flood elevation, including the elevation of the lowest floor of these facilities.

    The Proposed Action is not anticipated to impact existing floodplains at the site.

B. COASTAL RESOURCES

1. The Chesapeake and Atlantic Coastal Bays Critical Area: Not Relevant.
2. Tidal Wetlands: Not Relevant.
3. Non-Tidal Wetlands: Not Relevant.
4. Forests: Not Relevant.
5. Historical and Archaeological Sites: (Relevant policies are detailed below; Not Relevant Policies: 2, 3)

1. Based on predictive modeling for both prehistoric and historic (pre-military) resources, APG has a high probability of containing prehistoric sites; however, no known archaeological or Native American resources are located within or adjacent to the previously disturbed project area. The potential for impacts to cultural resources will be analyzed at a later date for individual undertakings, as related to the larger project. If cultural resources are encountered during potential excavation and earth work activities, all work in the area of the discovery would cease immediately and the APG Cultural Resources Manager and the State Historic Preservation Officer (SHPO) would be notified.

6. Living Aquatic Resources: (Relevant policies are detailed below; Not Relevant Policies: 2-14)

1. Threatened and Endangered Species: No significant adverse effects on bald eagles or on rare, threatened, or endangered species would be expected if the Proposed Action was implemented. For any proposed project that falls within an eagle buffer, the project management team would be required to coordinate in advance with the Garrison Bald Eagle Biologist for any required measures to avoid or minimize "take" or disturbance to eagles.

   An unpermitted "take" of a rare, threatened, or endangered species would not occur under the Proposed Action. As discussed in the PEA (Section 4.6.1.5), only two federal and/or state listed species are considered to occur within the boundaries of the study area: Northern Long-Eared Bat (federally and state threatened) and Monarch Butterfly (federal candidate) (U.S. Fish and Wildlife Service [USFWS] 2024). While these species may be located within the study area, it is not anticipated that any proposed upgrades and associated work would be located near these habitats. If any other federal or state protected species were found near the project sites, the installation would consult with the USFWS, the National Marine Fisheries Service, or the responsible state agency (as appropriate) and appropriate steps would be taken to ensure species were not harmed. Such steps should include scheduling construction work outside the breeding and nesting seasons or relocating the animal. No adverse impacts on protected species, therefore, would be expected under the Proposed Action at any site.

C. COASTAL USES

1. **Mineral Extraction**: Not Relevant.
2. **Electrical Generation and Transmission**: Not Relevant.
3. **Tidal Shore Erosion Control:** Not Relevant.
4. **Oil and Natural Gas Facilities**: Not Relevant.
5. **Dredging and Disposal of Dredged Material**: Not Relevant.
6. **Navigation**: Not Relevant.
7. **Transportation**: Not Relevant.
8. **Agriculture**: Not Relevant.
9. **Development**: Not Relevant.
10. **Sewage Treatment**: Not Relevant.

D. SUMMARY OF FINDINGS

Based on the above analysis as well as the extended analysis within the PEA, APG personnel would: 1) ensure that contractor personnel use and maintain appropriate BMPs; 2) obtain the requisite permits and approvals for potential construction and operational work; and 3) implement measures to mitigate potential environmental impacts. APG has conducted a Coastal Zone Management Federal Consistency review of the Proposed Action and has determined that the Proposed Action is consistent, to the maximum extent practicable, with the policies of Maryland's approved federal Coastal Zone Management Program.

REFERENCES

MDNR. 2011. *Maryland's Coastal Zone Management Program Enforceable Coastal Policies.* Maryland Department of Natural Resources. 2011.

USAMRMC. 2004. Final Programmatic Environmental Impact Statement for Chemical Biological Defense Program (CBDP). May.

USFWS. 2024. USFWS Information for Planning and Consultation (IPaC) Official Species List – APG MRICD Programmatic Environmental Assessment. Generated: February.

APPENDIX C: Information for Planning and Consultation (IPaC) Report

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: February 01, 2024
Project code: 2024-0044123
Project Name: APG MRICD Programmatic Environmental Assessment

Federal Nexus: yes
Federal Action Agency (if applicable): Army

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'APG MRICD Programmatic Environmental Assessment'

Dear Deidre DeRoia:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on February 01, 2024, for 'APG MRICD Programmatic Environmental Assessment' (here forward, Project). This project has been assigned Project Code 2024-0044123 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "May Affect, Not Likely to Adversely Affect" the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your

IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the Chesapeake Bay Ecological Services Field Office and reference Project Code 2024-0044123 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

APG MRICD Programmatic Environmental Assessment

2. Description

The following description was provided for the project 'APG MRICD Programmatic Environmental Assessment':

> The U.S. Army Medical Research Institute of Chemical Defense (MRICD) will continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and chemical casualty care education/ training activities on it's 34.58 acre campus on Aberdeen Proving Ground’s Edgewood Area. Activities continue year-round. The majority of activities take place indoors, but a 1-acre outdoor training facility is active at least 7 days per month from February - June and August - November.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.39527045,-76.28879628455954,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

10. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

11. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

13. Will the action cause effects to a bridge?

    No

14. Will the action result in effects to a culvert or tunnel?

    No

15. Does the action include the intentional exclusion of northern long-eared bats from a building or structure?

    Note: Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local U.S. Fish and Wildlife Services Ecological Services Field Office to help assess whether northern long-eared bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures

    No

16. Does the action involve removal, modification, or maintenance of a human-made structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

17. Will the action directly or indirectly cause construction of one or more new roads that are open to the public?

    Note: The answer may be yes when a publicly accessible road either (1) is constructed as part of the proposed action or (2) would not occur but for the proposed action (i.e., the road construction is facilitated by the proposed action but is not an explicit component of the project).

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average daily traffic on one or more existing roads?

    Note: For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

20. Will the proposed action involve the creation of a new water-borne contaminant source (e.g., leachate pond pits containing chemicals that are not NSF/ANSI 60 compliant)?

    No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

22. Will the action include drilling or blasting?

    No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use)?

    Yes

24. Will the military training affect suitable northern long-eared bat summer habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

25. Will the proposed action involve the use of herbicides or pesticides other than herbicides (e.g., fungicides, insecticides, or rodenticides)?

    No

26. Will the action include or cause activities that are reasonably certain to cause chronic nighttime noise in suitable summer habitat for the northern long-eared bat? Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

27. Does the action include, or is it reasonably certain to cause, the use of artificial lighting within 1000 feet of suitable northern long-eared bat roosting habitat?

    Note: Additional information defining suitable roosting habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

28. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    No

29. Will the action result in the use of prescribed fire?

    No

30. Will the action cause noises that are louder than ambient baseline noises within the action area?

    Yes

31. Will the action cause noises during the active season in suitable summer habitat that are louder than anthropogenic noises to which the affected habitat is currently exposed? Answer 'no' if the noises will occur only during the inactive period.

    Note: Inactive Season dates for areas within a spring staging/fall swarming area can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

PROJECT QUESTIONNAIRE

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: February 01, 2024
Project Code: 2024-0044123
Project Name: APG MRICD Programmatic Environmental Assessment

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

PROJECT SUMMARY

Project Code: 2024-0044123
Project Name: APG MRICD Programmatic Environmental Assessment
Project Type: Military Operations
Project Description: The U.S. Army Medical Research Institute of Chemical Defense (MRICD) will continue performing mission-related medical chemical, biochemical, and non-kinetic research/development, and chemical casualty care education/ training activities on it's 34.58 acre campus on Aberdeen Proving Ground's Edgewood Area. Activities continue year-round. The majority of activities take place indoors, but a 1-acre outdoor training facility is active at least 7 days per month from February - June and August - November.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.39527045,-76.28879628455954,14z

Counties: Harford County, Maryland

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBHx

ESTUARINE AND MARINE WETLAND

- E2EM1P6

ESTUARINE AND MARINE DEEPWATER

- E1UBL6

IPAC USER CONTACT INFORMATION

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