

**ENVIRONMENTAL ASSESSMENT (EA)**  
**TO RESTORE AND MAINTAIN THE LINE OF SIGHT FOR**  
**TRAINING AREA 9F, OBSERVATION POINT 59C**  
**JOINT BASE MCGUIRE-DIX-LAKEHURST, NEW JERSEY**



PREPARED BY:

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

PREPARED for:

**Integrated Training Area Management Program and  
U.S. Air Force**

April 2024

Letters or other written comments provided may be published in the Final EA. As required by law, substantive comments will be addressed in the Final EA and made available to the public. Any personal information provided will be kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

## GLOSSARY OF ABBREVIATIONS AND ACRONYMS

AF	Air Force	ITAM	Integrated Training Area Management
AICUZ	Air Installation Compatible Use Zone	JB MDL	Joint Base McGuire-Dix-Lakehurst
AMC	Air Mobility Command	LOS	Line of Sight
ASA	Army Support Activity	MBTA	Migratory Bird Treaty Act
BMP	Best Management Practices		National Ambient Air Quality Standards
	Comprehensive Management Plan	NAAQA	
CMP		NEPA	National Environmental Policy Act
CEQ	Council on Environmental Quality	NHPA	National Historic Preservation Act
CFR	Code of Federal Regulations		New Jersey Department of Environmental Protection
CH <sub>4</sub>	Methane	NJDEP	
CO	Carbon Monoxide	NOA	Notice of Availability
CO <sub>2</sub>	Carbon Dioxide	NOX	Nitrogen Oxide
	Department of the Air Force	N <sub>2</sub> O	Nitrous Oxide
DAFI	Instruction		National Register of Historic Places
DCAT	Defense Climate Assessment Tool	NRHP	
DCR	Discharge Cleanup Removal Plan	O <sub>3</sub>	Ozone
DOD	Department of Defense	OIC	Officer in Command
DODI	Department of Defense Instruction	OP	Observation Point
	Description of the Proposed		Representative Concentration
DOPAA	Action and Alternatives	RCP	Pathway
	Discharge Prevention, Containment and	SHPO	State Historic Preservation Officer
DPCC	Countermeasures	SOX	Sulfur Oxide
EA	Environmental Assessment		Spill Prevention, Containment and
	Environmental Impact Analysis	SPCCP	Countermeasures Plan
EIAP	Process	SRP	Sustainable Range Program
EIS	Environmental Impact Statement	TCP	Traditional Cultural Properties
EO	Executive Order	TY22	Training Year 22
	Energy Saving Performance	UAS	Unmanned Aircraft System
ESPC	Contracts		United States Army Corps of Engineers
FONSI	Finding of No Significant Impact	USACE	
	Integrated Cultural Resources	USAF	United States Air Force
ICRMP	Management Plan		United States Environmental
IDP	Installation Development Plan	USEPA	Protection Agency
	Integrated Natural Resources	USC	United States Code
INRMP	Management Plan		United States Fish and Wildlife Service
IPMP	Integrated Pest Management Plan	USFWS	
		UXO	Unexploded Ordnance
		VOC	Volatile Organic Compounds

**TABLE OF CONTENTS****Contents**

<b>1.0</b>	<b>PURPOSE OF AND NEED FOR ACTION.....</b>	<b>1-1</b>
1.1	INTRODUCTION .....	1-1
1.1	PURPOSE OF THE ACTION .....	1-2
1.2	NEED FOR THE ACTION .....	1-2
1.3	INTERAGENCY/INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS .....	1-1
1.3.1	Interagency Coordination and Consultations .....	1-1
1.3.2	Government to Government Consultations .....	1-1
1.3.3	Other Agency Consultations.....	1-1
1.4	PUBLIC AND AGENCY REVIEW OF EA.....	1-2
1.5	DECISION TO BE MADE .....	1-2
<b>2.0</b>	<b>DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES .....</b>	<b>2-3</b>
2.1	PROPOSED ACTION .....	2-3
2.2	PROJECT AREA.....	2-3
2.3	SELECTION STANDARDS.....	2-3
2.4	SCREENING OF THE ALTERNATIVES.....	2-4
2.4.1	Range Line of Sight Restoration Alternatives.....	2-4
2.4.2	Vegetation Removal Options.....	2-7
2.5	DETAILED DESCRIPTION OF THE ALTERNATIVES .....	2-8
2.5.1	Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative) .....	2-8
2.5.2	Alternative 6: No Action Alternative .....	2-9
2.6	ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATIONS.....	2-10
<b>3.0</b>	<b>AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES .....</b>	<b>3-11</b>
3.1	SCOPE OF THE ANALYSIS .....	3-11
3.2	CLIMATE, CLIMATE CHANGE, AND GREENHOUSE GASSES.....	3-12
3.3	AIR QUALITY .....	3-13
3.4	WATER RESOURCES.....	3-13
3.4.1	Regulatory Framework .....	3-13
3.4.2	Surface Water Resources .....	3-14
3.4.3	Wetlands .....	3-15
3.5	SAFETY AND OCCUPATIONAL HEALTH .....	3-17
3.6	HAZARDOUS MATERIALS / WASTE.....	3-17
3.7	BIOLOGICAL / NATURAL RESOURCES .....	3-17
3.7.1	Regulatory Framework .....	3-17
3.7.2	Integrated Natural Resource Management Plan .....	3-18
3.7.3	Vegetation .....	3-18
3.7.4	Wildlife.....	3-20

3.7.5	Special Status Species.....	3-20
3.8	CULTURAL RESOURCES.....	3-23
3.9	GEOLOGICAL RESOURCES .....	3-24
3.9.1	Geology .....	3-24
3.9.2	Topography .....	3-25
3.9.3	Soils.....	3-25
<b>4.0</b>	<b>ENVIRONMENTAL CONSEQUENCES .....</b>	<b>4-1</b>
4.1	INTRODUCTION .....	4-1
4.2	CLIMATE, CLIMATE CHANGE, AND GREENHOUSE GASSES .....	4-1
4.3	AIR QUALITY .....	4-2
4.4	WATER RESOURCES.....	4-3
4.4.1	Surface Water .....	4-3
4.4.2	Wetlands .....	4-3
4.5	SAFETY AND OCCUPATIONAL HEALTH .....	4-5
4.6	HAZARDOUS MATERIALS / WASTE.....	4-5
4.7	BIOLOGICAL / NATURAL RESOURCES .....	4-6
4.7.1	Vegetation .....	4-6
4.7.2	Wildlife .....	4-8
4.7.3	Special Status Species.....	4-8
4.8	CULTURAL RESOURCES.....	4-9
4.9	GEOLOGICAL RESOURCES .....	4-10
4.10	OTHER NEPA CONSIDERATIONS.....	4-10
4.10.1	Unavoidable Adverse Effects .....	4-10
4.10.2	Relationship of Short-Term Uses and Long-Term Productivity .....	4-10
4.10.3	Irreversible and Irretrievable Commitments of Resources .....	4-11
4.11	CUMULATIVE EFFECTS .....	4-11
<b>5.0</b>	<b>LIST OF PREPARERS .....</b>	<b>5-15</b>
<b>6.0</b>	<b>PERSONS AND AGENCIES CONSULTED/COORDINATED .....</b>	<b>6-16</b>
<b>7.0</b>	<b>REFERENCES.....</b>	<b>7-18</b>

## LIST OF TABLES

Table 2-1: Screening of the Range Line of Site Restoration Alternatives .....	2-5
Table 2-2. Screening of the Vegetation Removal Options.....	2-7
Table 3-1. Wetlands in the Project Area .....	3-16
Table 3-2. Vegetation and Land Cover in the Project Area .....	3-19
Table 3-3. Soil Survey Map Legend.....	3-25

Table 4-1. Greenhouse Gas Emissions Estimates (Tons) .....	4-1
Table 4-2. Criteria Pollutant Emissions Estimates (Tons).....	4-3
Table 4-3. Wetland Vegetation with the Potential to be Cut during the OP59C LOS Restoration Activities .....	4-4
Table 4-4. Vegetation Potentially Cut by OP59C LOS Restoration Activities .....	4-6
Table 5-1. List of Preparers .....	5-15
Table 6-1. Persons and Agencies Consulted/Coordinated .....	6-16

## LIST OF FIGURES

Figure 1-1. Location of JB MDL, Burlington and Ocean Counties, New Jersey.....	1-3
Figure 1-2. Location of OP 59C LOS Area (Project Area) in the Dix Area of JB MDL .....	1-4
Figure 3-1. Streams and other Water Resources In and Near the Project Area.....	3-15
Figure 3-2. Wetlands in the Project Area .....	3-16
Figure 3-3. Vegetation/Land Cover in the Impact Project Area .....	3-20
Figure 3-4. Soil Survey Map for the Project Area .....	3-26
Figure 4-1. Wetlands with the Potential to be Cut during OP59C LOS Restoration Activities ...	4-5
Figure 4-2. Vegetation Potentially Cut during OP59C LOS Restoration Activities.....	4-7

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Environmental Assessment

Restore and Maintain the Training Area 9F OP59C LOS Area  
Joint Base McGuire-Dix-Lakehurst

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## 1.0 PURPOSE OF AND NEED FOR ACTION

### 1.1 INTRODUCTION

The U.S. Air Force (AF) and Army Support Activity (ASA) Integrated Training Area Management (ITAM) of Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey have identified the need to restore the function of the Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) Area. OP 59C LOS Area is in the Dix area of JB MDL. This Environmental Assessment (EA) was prepared to evaluate the potential environmental impacts of this proposed project in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] 4331 et seq.), the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] 1500-1508), the Air Force Environmental Impact Assessment Process Regulations at 32 CFR Part 989, and Air Force Instruction 32-7061 (Secretary of the Air Force, 2003).

The JB MDL was established on October 1, 2009, by joining McGuire Air Force Base, Fort Dix, and Lakehurst Naval Air Engineering Station into a single entity, managed by AF's Air Mobility Command (AMC). It spans more than 20 miles west to east within Burlington and Ocean counties in central New Jersey (Figure 1-1). Joint Base McGuire-Dix-Lakehurst encompasses a total of 41,766 acres. The Dix Area of JB MDL encompasses 30,784 acres, which includes the cantonment area, tactical training areas, and training ranges.

The Dix area houses a U.S. Army Reserve Command Training, Mobilization, and Deployment Center. Its primary mission is to provide training support to active and reserve component units of all services and licensed non-Department of Defense (DOD) activities. It also serves as a major platform to generate Combat Forces, through its mission of receiving, training, equipping, and deploying military forces. The post has been deemed America's First Premier Joint Mobilization Station and Power Projection Platform (USAF 2021).

Dix Range Operations is responsible for the 28,000-acre Range and Training Area Complex. The Range and Training Area Complex contains 14,000 acres of maneuver space, 62 live fire ranges, 36 Bivouac sites, and the Contingency Operating Location. The Range Complex is capable of supporting qualification of all individual and crew served weapons through 155 mm howitzer, rotary wing gunnery, and small and medium unmanned aircraft system (UAS) training (USAF 2021). Figure 1-2 shows the location of OP 59C LOS Area on JB MDL (i. e. the project area). The ITAM program is a core component of the Army's Sustainable Range Program (SRP) and is responsible for maintaining training land to help the Army meet its training requirements.

The information presented in this document will serve as the basis for deciding whether the proposed action would result in a significant impact to the human environment, requiring the preparation of an environmental impact statement (EIS), or whether no significant impacts would occur, in which case a finding of no significant impact (FONSI) would be appropriate. Because the proposed action does not involve "construction" in a wetland as defined in Executive Order (EO) 11990, *Protection of Wetlands*, or "action" in a floodplain under EO 11988, *Floodplain Management* as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, a Finding of No Practicable Alternative is not required.

## **1.1 PURPOSE OF THE ACTION**

The purpose of the action is to allow safe and continued use of OP 59C area for indirect artillery live fire training. The objective is to restore the function of the OP 59C LOS Area and to maintain that function through the control of vegetation to prevent future safety issues. The goal is to be consistent with the Army SRP and JB MDL Natural Resources Program. To lessen the impact of project site work on the natural environment, the action will be planned to minimize disturbance and apply best management practices, as needed and possible.

## **1.2 NEED FOR THE ACTION**

The Range Control Safety Officer in Command (OIC), through ongoing assessments, determined that the line of sight needs to be restored at OP 59C, where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The current conditions create an unsafe environment and places soldiers and property at risk.

Indirect fire is a critical part of artillery units' mission. Indirect fire is aiming and firing a projectile without a direct line of sight between the gun and a target. Indirect fire relies on a forward observer to determine the position of the projectile relative to the target. OP 59C is the only location within the range area where indirect fire can be observed, and all indirect fire must be observed to be fired safely. Indirect fire that cannot be observed must be ceased for safety. Currently only 15% of available targets can be observed within the impact area. If trees continue to grow, all targets will soon be obscured. If training is allowed to continue under existing conditions, there would be a risk of injury to personnel, including neighboring units, and damage to the range equipment and targets. If artillery and mortar training are prohibited because of the current conditions, it would result in a risk to National Security, as the Artillery and Infantry Battalions of the Army would not be prepared with proper training.

The JB MDL currently has six Artillery Battalions and 13 Infantry Battalions with mortars who require unobscured vision of all targets within the impact area to train to standard proficiency. Forward observers relay grid coordinates to the firing battery or mortar platoons who may be located at distances as far as three miles away. The ability to locate targets and place ordnance on those targets is the primary mission. Precision is the utmost factor in safely conducting indirect fire because of the limited area within the range footprint. In Training Year 2022 (TY22) there were 26 days of indirect fire out of 365 possible days from 5 units; units are curtailing training due to cost of transporting tube artillery pieces for limited training due to the obstructions caused by the vegetation.

There are three training areas in the northeast U.S. used to accommodate training time for indirect fire units. By reducing or eliminating a viable indirect fire training location at JB MDL, multiple combat units would not be able to maintain proficiency due to unavailable training time. This will make numerous units non-deployable or 'mission ineffective. Between the U.S. Army National Guard and the Marine Reserves Four Infantry Divisions of Artillery would be unable to maintain proficiency, a critical combat multiplier.

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Environmental Assessment  
Joint Base McGuire-Dix-Lakehurst

Restore and Maintain the Training Area 9F OP59C LOS Area

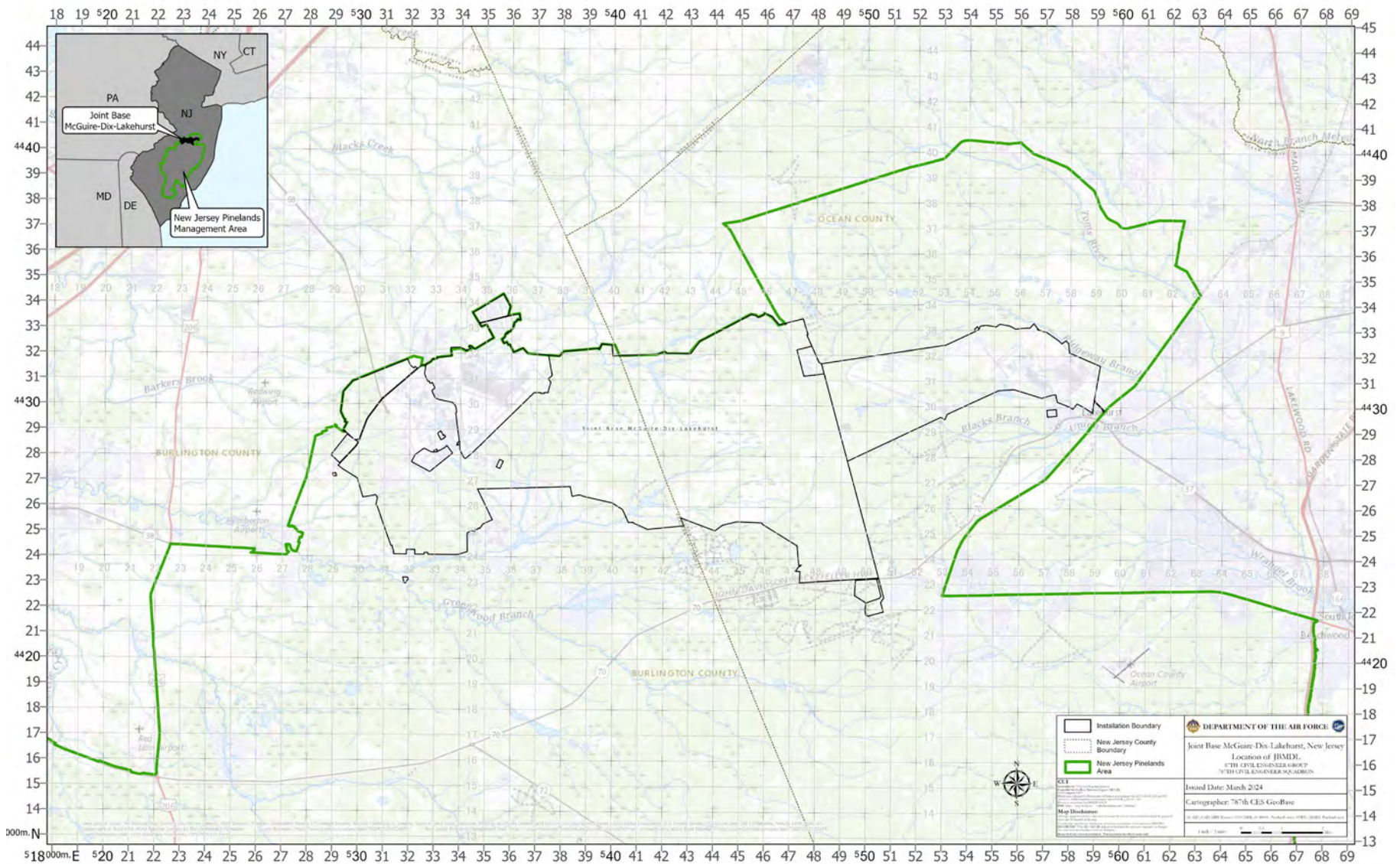
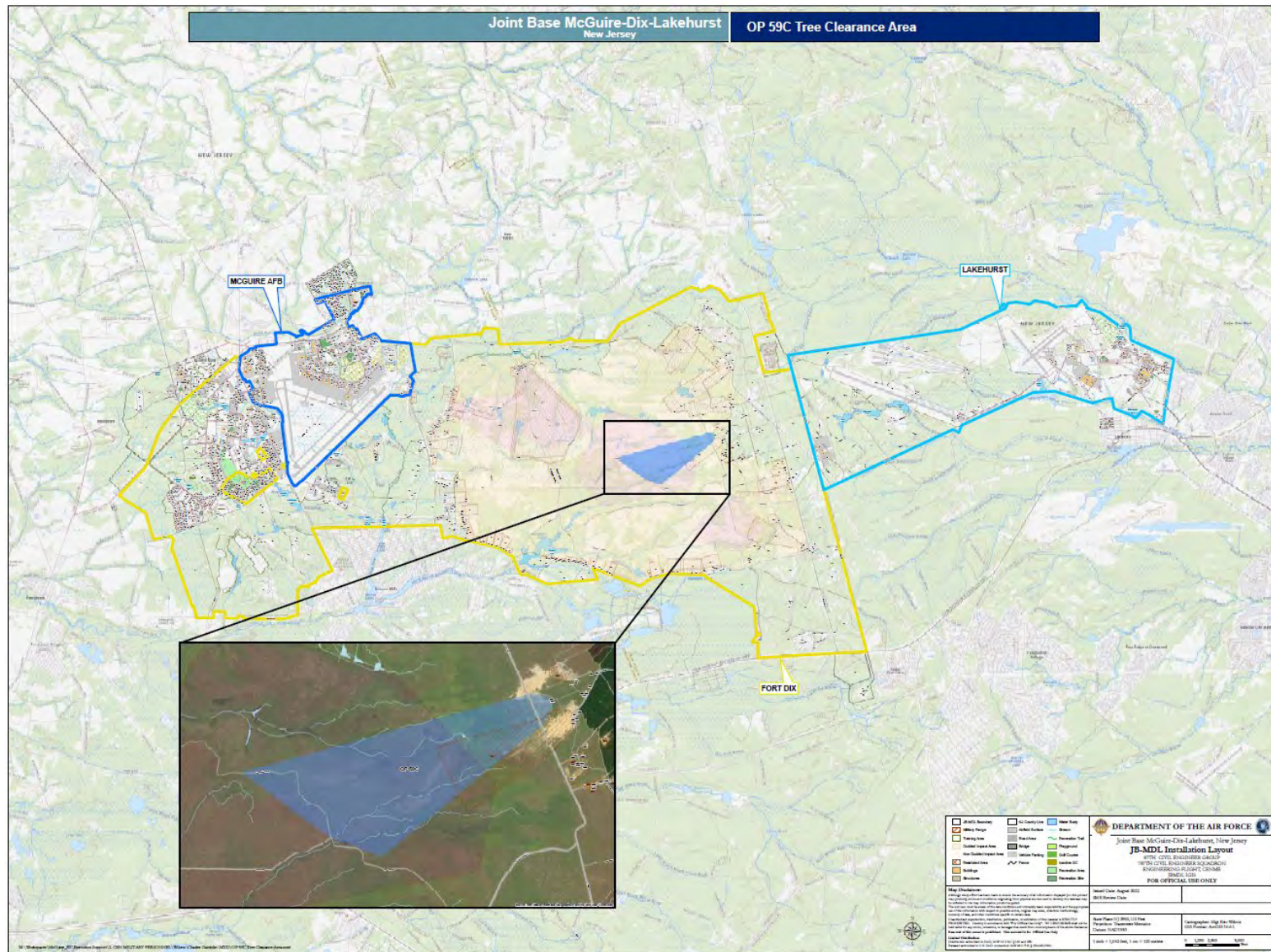


Figure 1-1. Location of JB MDL, Burlington and Ocean Counties, New Jersey

Environmental Assessment  
Joint Base McGuire-Dix-Lakehurst

## Restore and Maintain the Training Area 9F OP59C LOS Area



**Figure 1-2. Location of OP 59C LOS Area (Project Area) in the Dix Area of JB MDL**

## **1.3 INTERAGENCY/INTERGOVERNMENTAL COORDINATION AND CONSULTATIONS**

### **1.3.1 Interagency Coordination and Consultations**

Scoping is an early and open process for developing the breadth of issues to be addressed in the EA and for identifying significant concerns related to a proposed action. Per the requirements of Intergovernmental Cooperation Act of 1968 (42 U.S.C. 4231(a)) and EO 12372, Federal, state, and local agencies with jurisdiction that could be affected by the proposed action were notified during the development of this EA (see Appendix A).

### **1.3.2 Government to Government Consultations**

The E. O. 13175, *Consultation and Coordination with Indian Tribal Governments* directs Federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. Consistent with that executive order, DOD Instruction (DoDI) 4710.02, *Interactions with Federally-Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-recognized Tribes*, federally-recognized tribes that are historically affiliated with the JB MDL geographic region will be invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The JB MDL point-of-contact for Native American tribes is the Installation Commander. The Installation Commander has designated the JB MDL Environmental Supervisor (787th CES/CEIE) as the Installation Tribal Liaison Officer in accordance with Department of the Air Force Instruction (DAFI) 90-2002, *Interactions with Federally Recognized Tribes*. In September 2011, the Installation Commander invited three federally recognized tribes (Delaware Nation, Delaware Tribe of Indians, and Stockbridge Munsee Community) to engage in government to government consultation. On December 9, 2011, the Stockbridge Munsee Community indicated that JB MDL is not in a county in which the tribe has an interest. However, the Delaware Nation and Delaware Tribe of Indians expressed interest in government to government consultation with JB MDL.

The Native American tribal governments that will be coordinated or consulted with regarding the action are listed in Appendix A.

### **1.3.3 Other Agency Consultations**

Per the requirements of Section 106 of the National Historic Preservation Act and implementing regulations (36 CFR Part 800), Section 7 of the Endangered Species Act and implementing regulations, and the Migratory Bird Treaty Act (MBTA), findings of effect and request for concurrence will be transmitted to the New Jersey State Historic Preservation Officer (SHPO) and the US Fish and Wildlife Service (USFWS).

Correspondence regarding the findings and concurrence and resolution of any adverse effect will be included in Appendix A.

## **1.4 PUBLIC AND AGENCY REVIEW OF EA**

Because the Proposed Action area contains waters and wetlands, it is subject to the requirements and objectives of EO 11990, Protection of Wetlands. The Air Force will publish an early notice that the proposed action would occur in a wetland in the newspapers of record (listed below). The notice will identify state and federal regulatory agencies with special expertise that were contacted about the wetlands and will also solicit public comment on the proposed action and any practicable alternatives.

The Notice of Availability (NOA) of the Draft EA and Finding of No Significant Impact (FONSI), has been published in the newspapers of record, Asbury Park Press, , announcing the availability of the EA for review. The NOA invites the public to review and comment on the Draft EA. The NOA and public and agency comments will be provided in Appendix A.

Copies of the Draft EA and FONSI have also been made available for review at the following locations:

- Manchester Library Branch, Ocean County, 21 S. Colonial Drive, Manchester, NJ 08759
- JB MDL Website: <https://www.jbmdl.jb.mil/Home/Public-Affairs/>
- USACE Philadelphia District Website: <https://www.nap.usace.army.mil/Missions/Civil-Works/Public-Notices-Reports/>

## **1.5 DECISION TO BE MADE**

The EA evaluates whether the proposed action would result in significant impacts on the human environment. If significant impacts are identified and cannot be avoided or minimized, JB MDL would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the proposed action, or abandon the proposed action.

This EA is a planning and decision-making tool that will be used to guide JB MDL in implementing the proposed action in a manner consistent with Air Force standards for environmental stewardship.

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

### **2.1 PROPOSED ACTION**

The AF and ASA ITAM of JB MDL propose to satisfy the Purpose and Need for the Action described in Sections 1. 2 and 1. 3 by restoring the OP 59C LOS Area, to allow the safe and continued use of the entire OP 59C area for artillery live fire training. Approximately 279 acres of trees and shrubs within the 432-acre LOS area would be cut to prevent line of sight obstruction from OP 59C to the targets (see Figure 1-2). Following the initial cutting, vegetation would be maintained at a height of 12 to 18 inches or less for continued safe operation. Due to the size and scope of the proposed action, the project will be conducted in 5 to 7 phases over a period of 5 to 7 fiscal years (FY) based on availability of funding. The cutting would be spread evenly, to the extent that funding allows. The goal would be to clear 40 to 60 acres each year. Additionally, approximately 21 acres of coniferous (>50% crown closure) and Atlantic white cedar forest which serves as high-quality habitat, would be spread evenly across the 5 to 7 phases, to the extent that funding will allow.

### **2.2 PROJECT AREA**

The OP 59C LOS Area restoration occurs within the JB MDL Training Impact Area which is surrounded on three sides by the U-shaped Dix range area (see Figure 1-2). Weapons fired on these ranges are all aimed at the Training Impact Area. The total area of ranges and Training Impact Area is 13,765 acres. Entry is restricted in the Training Impact Area due to safety concerns. The constant firing into this area creates small craters and sometimes causes wildfires (USAF 2021).

The JB MDL Training Impact Area has a high potential for unexploded ordnance (UXO) which limits OP59C LOS restoration alternatives for safety and limited access reasons. Options considered safe for effective tree and shrub clearing include herbicides, controlled burn, robotic mechanical cutting, and aerial cutting. Standard mechanical clearance methods were eliminated because of the safety concerns associated with UXO in the Training Impact Area.

### **2.3 SELECTION STANDARDS**

The NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the proposed action. "Reasonable alternatives" are those that also could be utilized to meet the purpose of and need for the proposed action. Per the requirements of 32 CFR §989, the Air Force EIAP regulations, selection standards are used to identify alternatives for meeting the purpose of and need for the proposed action.

In addition to supporting the Purpose and Need for the Action, the proposed action must meet the following baseline requirements:

- Compatible with the existing, ongoing military mission and activities at JB MDL.
- Meets applicable Army SRP and JB MDL Range Management Plan requirements:
  - Maintain firing range capacity for 4,000 soldiers and marines.
  - Firing range that offers a view into the valley and targets.

- Maintain trees and shrubs to a height of 12 to 18 inches or less, to maintain a clear visual of the targets from the observation point at ground level. This would require all obscurants cut to below target height. The average height of a tank is 10 feet. By cutting to 18 inches, you could see the entire target area and targets.
- Compatible with the JB MDL 2021 Integrated Natural Resources Management Plan (INRMP) and incorporates all appropriate conservation measures to:
  - Manage fish and wildlife species and their habitats within the constraints of the military mission.
  - Maximize floral and faunal diversity in wetland habitats through water quality protection and manage for no net loss of wetland and watershed acreage, functions, and values.
- Consistent with DoDI 4715. 3, Environmental Conservation Program, including:
  - Maintain or restore native ecosystem types across their natural range where practical and consistent with the military mission.
  - Maintain or restore ecological processes such as fire and other disturbance regimes where practical and consistent with the military mission.
  - Maintain or restore the hydrological processes in streams, floodplains, and wetlands when feasible.
- Compatible with the Pinelands Comprehensive Management Plan (CMP), to the maximum extent feasible.

## 2.4 SCREENING OF THE ALTERNATIVES

The selection standards described in Section 2. 2 were applied to the alternatives to determine which alternative(s) could serve the purpose of and need for the action (Table 2-1).

### 2.4.1 Range Line of Sight Restoration Alternatives

**Alternative 1: Line of Sight Restoration (Preferred Alternative).** Alternative 1 includes restoring all function to OP 59C LOS area through the cutting trees and shrubs to a height of 12 to 18 inches. The OP 59C LOS area is approximately 432 acres. Through coordination with resource agencies and in an effort to avoid and minimize potential impacts, it was determined that approximately 279 acres of the total 432 acres containing trees and shrubs will only need to be cut for: 1) artillery and mortar units to observe the targets, 2) critical and varied tasks of firing and shifting guns to secondary and tertiary targets, and 3) staying within the footprint of OP 59C.

Cutting of maturing trees, shrubs, and other forest vegetation could be accomplished using various methods, such as chemical, fire, and mechanical means. Robotic mechanical cutting or aerial cutting are being considered for areas with UXO.

**Table 2-1: Screening of the Range Line of Site Restoration Alternatives**

Range Line of Site Restoration Alternatives	Selection Standards				
	Compatible with JB MDL Military Mission	Meets Army SRP and JB MDL Range Management Plan Requirements	Compatible with the JB MDL INRMP	Consistent with DoDI 4715. 3, Environmental Conservation Program	Compatible with the Pinelands CMP, to the maximum extent practicable
Alternative 1: Line of Site Restoration (Preferred Alternative)	Yes	Yes	Yes	Yes	Yes
Alternative 2: Partially Restore OP 59C LOS Area	No	No	Partially	Partially	Yes
Alternative 3: Move OP 59C	No	No	Yes	Yes	Yes
Alternative 4: Change the Location of OP 59C	No	No	Yes	Yes	Yes
Alternative 5: Decommission OP 59C	No	No	Yes	Yes	Yes
Alternative 6: No Action	No	No	Partially	Partially	Yes

Alternative 1 satisfies all selection criteria because it is compatible with the JB MDL training mission and will allow safe and continued use of the entire OP 59C area for artillery live fire training, allowing JB MDL to fully realize its training mission requirements.

**Alternative 2: Partially Restore OP 59C LOS Area.** Alternative 2 includes restoring some function to OP 59C LOS area by removing maturing trees, shrubs and other forest vegetation from all areas except where UXO is present. However, UXO is present in

most of the LOS area. Additionally, full functionality of the LOS area is required for live fire training.

Alternative 2 would not satisfy all selection criteria because it is not compatible with the JB MDL training mission. Partial restoration of OP59C LOS restoration would not allow safe use of the entire OP 59C area for artillery live fire training, which requires the ability to observe targets and accurately report location of detonating rounds within the impact area. By leaving some trees, the growth will again intercede at some point to obscure the area and once again require the clearance of obstructions. Therefore, Alternative 2 is not compatible with the Army SRP, and JB MDL Range Program, JB MDL INRMP, and DODI 4715. 3. Therefore, Alternative 2 has been eliminated from further consideration.

Alternative 3: Reconfigure OP 59C LOS Area. Alternative 3 requires reconfiguring OP 59C LOS area to meet current training needs. This alternative is not viable because the training ranges and lands adjacent to OP 59C are completely developed and used for other missions. Adjacent land is not available with the characteristics needed to meet the requirements of the OP 59C LOS area.

Alternative 4: Move OP 59C. Alternative 4 includes moving OP 59C to another section of JB MDL. This alternative is not viable because there are no other locations on JB MDL with the space and characteristics needed to meet the requirements for OP 59C LOS area. Additionally, other training ranges are completely developed for other needs.

Alternative 5: Decommission OP 59C. Alternative 5 includes decommissioning OP 59C. This alternative is not viable because OP 59C is needed to meet the current JB MDL capacity requirements for 4,000 soldiers and marines. The next closest installation with the capabilities of OP 59C is Fort Drum in upstate New York which is not as easily accessible as JB MDL.

Currently, the training areas in the northeast United States are needed to accommodate training time for indirect fire units. By reducing or eliminating a viable indirect fire training location at JB MDL, multiple combat units would not be able to maintain proficiency due to unavailable training time. This will make units non-deployable or mission ineffective.

Alternative 6: No Action. "No action" would allow for continued overgrowth, thus increasing the risk of harm to troops and equipment as time passes, and as the vegetation obscures more and more of the line of sight. Under the No Action Alternative, function would not be restored in the OP 59C LOS area. Artillery live fire training would not be able to continue safely at the OP 59C LOS area. The No Action Alternative would not satisfy all selection criteria because it is not compatible with the JB MDL training mission. Allowing training to continue under the current conditions would result in risk of injury of personnel and damage to the range and equipment. If training is not allowed to continue, JB MDL would not have the capacity to train 4,000 soldiers and marines. The No Action Alternative is not compatible with the JB MDL military mission, Army SRP, and JB MDL Range Program; therefore, it is only partially compatible with the JB MDL INRMP and DODI 4715. 3. However, the No Action Alternative will be carried forward for further analysis, as required by CEQ regulations.

Currently, training areas in the northeast U.S. are needed to accommodate training time for indirect fire units. By reducing or eliminating a viable indirect fire training location at JB MDL, multiple combat units would not be able to maintain proficiency due to unavailable training time. This will make units non-deployable or mission ineffective.

### 2.4.2 Vegetation Removal Options

In addition to considering various alternatives to LOS restoration at OP 59C, vegetation removal options were considered. Vegetation removal options could be used under Alternatives 1 through 4. The selection standards described in Section 2. 2 were applied to the vegetation removal options to determine which could serve the purpose of and need for the action (Table 2-2).

**Table 2-2.Screening of the Vegetation Removal Options**

Vegetation Removal Options	Selection Standards				
	Compatible with JB MDL Military Mission	Meets Army SRP and JB MDL Range Management Plan Requirements	Compatible with the JB MDL INRMP	Consistent with DoDI 4715. 3, Environmental Conservation Program	Compatible with the Pinelands CMP, to the maximum extent practicable
Mechanical Robotic Platforms	Yes	Yes	Yes	Yes	Yes
Controlled Burn	Yes	No	Yes	Yes	Yes
Herbicide Application	Yes	Yes	No	No	No
Mechanical – Aerial Trimming	No	No	Yes	Yes	Yes

Mechanical Robotic Vegetation Cutting (Preferred). Robotic platforms use standard tree and shrub cutting equipment, which are controlled remotely. Maturing trees, shrubs, and other forest vegetation would be cut to a height of 12 to 18 inches. This alternative would be safe to use in an area with UXO. This option satisfies all selection criteria because it is compatible with the JB MDL training mission and will allow safe and continued use of the entire OP 59C area for artillery live fire training, allowing JB MDL to fully realize its training mission requirements. This alternative is also compatible with the JB MDL INRMP, DoDI 4715. 3, and Pinelands CMP. Mechanical robotic vegetation removal would be carried forward for LOS restoration and maintenance under Alternative 1.

Controlled Burn. Prescribed burning is conducted annually at JB MDL and is typically used to reduce hazardous accumulations of forest fuels to reduce the threat of catastrophic wildfires. Many of the Pinelands plant communities are fire-dependent, the use of prescribed fire at appropriate time intervals can help maintain the area's native plants and animals, including unique ecosystems present in the Training Impact Area. It is unlikely that mature trees would be reduced to a height of 12 to 18 inches with a controlled burn; therefore, this alternative would not meet the requirements of the Army SRP and the JB MDL range management plan to restore the OP 59C LOS area; therefore, this alternative has been removed from consideration to restore the OP 59C LOS. This alternative is compatible with the JB MDL INRMP, DoDI 4715. 3, and

Pinelands CMP. It can also be used in an area with UXO if safety concerns are addressed for the staff executing the controlled burn. It may be possible to use controlled burn to maintain the LOS area following the initial tree cutting. Prescribed burning would be carried forward under Alternative 1 for OP 59C LOS maintenance.

Herbicide Application. Herbicide application can be used for removal and thinning of trees and other vegetation; however, the JB MDL INRMP and associated integrated pest management plan (IPMP) and DoDI 4715. 3 commit to reducing pesticides and herbicides and targeting plants instead of broadcasting herbicides over large areas (USAF 2021; 87CES 2019). Because this alternative does not meet these requirements, it has been eliminated from further consideration.

Mechanical – Aerial Trimming. Aerial tree trimming is conducted from helicopters equipped with aerial tree-trimming saws (i. e., multiple 24-inch or 30-inch rotary blades powered by a motor suspended on a vertical boom). The helicopter would fly slowly as the aerial saw cuts and trims trees and other vegetation in its path. The saws can cut 8 to 10-inch tree limbs rapidly and cleanly. The tree limbs fall straight down. Aerial tree trimming is routinely used to maintain right of ways for transmission line right of ways (Illuminating Co. 2022). Two to 6 miles of right of way can be trimmed per day, depending on equipment and conditions (HeliAviation 2022). Aerial trimming could not be used to trim trees and other vegetation to a height of 18 inches or less. Because of this limitation and additional safety concerns associated with helicopter aviation, this alternative would not meet the requirements of the Army SRP and the JB MDL range management plan and has been eliminated from further consideration.

## **2.5 DETAILED DESCRIPTION OF THE ALTERNATIVES**

The NEPA and the CEQ regulations mandate the consideration of reasonable alternatives to the proposed action. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for the proposed action. The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this EA and feedback from the public and other agencies will inform decisions made about whether, when and how to execute the proposed action.

Two alternatives are analyzed in this EA, Alternative 1 (Preferred Alternative) and Alternative 6 (No Action Alternative). Alternative 1, Line of Sight Restoration is the only reasonable alternative capable of restoring full functionality to OP 59C LOS area (see Section 2.4.1) and answering the Purpose of and Need for the proposed action. Alternative 1 satisfies applicable AF, DoD, State, and Federal requirements, and supports current and future training mission requirements. Evaluating the No Action alternative is required by NEPA. The No Action alternative will substantively analyze the consequences of not undertaking the proposed action, not simply conclude no impact, and will serve to establish a comparative baseline for analysis.

### **2.5.1 Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative)**

Under Alternative 1 (Preferred Alternative), JB MDL would fully restore the OP 59C LOS Area by mechanical cutting approximately 279 acres of maturing trees, shrubs, and other forest vegetation from the 432-acre LOS area. Tree and shrubs would be cut to a height of 12 to 18 inches, would not be mulched or dragged, and the stumps would not be removed or grinded. The OP59C LOS area would be restored in 5 to 7 phases over a period of 5 to 7 FYs based on availability of funding. Tree and shrub cutting would be

spread as evenly as possible throughout the years, to the extent that funding allows. The goal would be to clear 40 to 60 acres each year. Additionally, the cutting of approximately 21 acres of coniferous (>50% crown closure) and Atlantic white cedar forest which serves as high-quality habitat, would be spread evenly across the 5 to 7 phases, to the extent that funding will allow.

Robotic mechanical vegetation removal is the only viable alternative to restore the OP 59C LOS area. Both robotic mechanical trimming and prescribed fire may be options for maintaining the OP 59C LOS area in the future. Robotic mechanical vegetation cutting uses robotic platforms such as Bobcats and Caterpillars with vegetation cutting attachments such as bucket, buncher, tree shear, forklift, excavator, or hot saw. These would be controlled through a mobile, trailered command unit, which would be a mile or more from the vegetation clearing. Robotic platforms have been successfully used for the vegetation clearing and thinning in UXO areas at Fort Liberty (previously Fort Bragg) Aerial Gunnery Range. A total of 1,168 acres were cleared or thinned over a 270-day period with a production rate of 4.5 acres per day (Davis et al. Undated). The production rate is dependent on conditions at the site. For the OP59C LOS restoration, a production rate of 0.75 acres per day is used as a conservative rate. Based on this and an estimate of 5 phases, clearing could take up to 75 days per year. If clearing was spread out over 7 phases, clearing could take 53 days per phase/year.

Prescribed burning is also proposed for maintaining the OP 59C LOS area following the initial robotic cutting. Many of the Pinelands plant communities are fire-dependent, the use of prescribed fire at appropriate time intervals can help maintain the area's native plants and animals. This includes the unique ecosystems present in the Training Impact Area. All prescribed burning would comply with the JB MDL Wildland Fire Management Plan and program. Considerations include:

- UXO safety
- NJDEP prescribed burn permit
- Weather conditions
- Firebreaks
- Safety and equipment
- Burn execution
- Burn evaluation
- Smoke management

JB MDL intentionally burns an average of 4,500 acres annually, depending on weather conditions. Maintenance of the OP59C LOS area would be part of this program.

### **2.5.2 Alternative 6: No Action Alternative**

"No action" would allow for continued overgrowth, thus increasing the risk of harm as time passes, and the vegetation obscures more and more of the line of sight. Under the No Action Alternative, the proposed action to restore the OP 59C LOS area at JB MDL would not occur. OP 59C LOS area would become unsafe to use for artillery live fire training. This would negatively impact the JB MDL training mission.

The No Action Alternative cannot be considered reasonable as it fails to address the purpose of and need for the action as described in Section 1. However, it will be carried forward for further analysis, consistent with CEQ regulations, to provide a baseline

condition against which the impacts of the OP 59C LOS Area restoration alternatives can be assessed.

## **2.6 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATIONS**

The following alternatives have been eliminated from further consideration because they do not meet the purpose and need of the proposed action, based on the results of screening presented in section 2. 3.

- Alternative 2: Partially Restore OP 59C LOS Area
- Alternative 3: Reconfigure OP 59C LOS Area
- Alternative 4: Move OP 59C
- Alternative 5: Decommission OP 59C
- Vegetation Removal Option C: Herbicide Application
- Vegetation Removal Option D: Mechanical – Aerial Trimming

### 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Land use, utilities/transportation, socioeconomics, environmental justice, and air installation compatible use zones were considered for potential impacts, determined to not be affected by the Proposed Action, and therefore were eliminated from detailed analysis in the EA.

#### 3.1 SCOPE OF THE ANALYSIS

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementing the Preferred Alternative or the No Action Alternative. This EA is limited in scope to a detailed analysis of resources that could be affected by the Proposed Action. Following a preliminary screening process, land use, utilities/transportation, environmental justice, air installation compatible use zones, and socioeconomics would not be affected based on the scope of the Proposed Action and therefore were eliminated from detailed analysis in the EA. The following describes those resource areas not carried forward for a detailed analysis, along with the rationale for their elimination.

- **Land Use:** The Proposed Action is in Training Area 9F OP59C, which has historically been a live fire training range. Current or future land use would not change.
- **Utilities/Transportation Resources:** The Proposed Action is in the installation training area and would not involve utilization or disruption of utility services. Construction activity would result in negligible increases to local traffic; however, these increases would be temporary and cease once the project is complete. As a result, the USAF anticipates no short or long-term adverse impacts.
- **Socioeconomics:** Tree clearing would be conducted by a specialized contractor on JB MDL. Socioeconomic impacts would be highly localized. It is unlikely there would be an economic impact perceptible within the greater areas of Ocean County.
- **Environmental Justice:** The EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, require that all federal agencies address the potential effects of policies on minorities, low-income populations, and children. The Proposed Action is located fully on JB MDL. It is unlikely that off-installation residences would experience short-term construction-related noise, air emissions, or increased vehicle traffic. No off-installation minority, low income, or youth populations would be adversely impacted by the Proposed Action.
- **Air Installation Compatible Use Zone (AICUZ):** The Proposed Action is in the training areas and will not affect the JB MDL AICUZ program.
- **Ground Water Resources:** The Proposed Action will not require any digging or water usage and therefore, will not affect the ground water resources at JB MDL.
- **Floodplains:** The EO 11988 requires Federal agencies to avoid to the extent possible the long and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. An outline of the completed 8-step process required by

USACE (ER 1126-2-65) to comply with Executive Order 11988 can be found in Appendix B. The Proposed Action occurs outside of the 0.2% annual exceedance floodplain (500-year floodplain) (FEMA Maps 34029C0255F, 34029C01040F) (see Appendix B). Additionally, the proposed action includes no ground disturbance, grading or construction and no tree or shrub cutting will occur within 25-buffer from the stream banks.

### **3.2 CLIMATE, CLIMATE CHANGE, AND GREENHOUSE GASSES**

The JB MDL is classified within the Humid Temperate Domain, Hot Continental Division, Eastern Broadleaf Forest (Oceanic) Province, Upper Atlantic Coastal Plain Section (Bailey, 2014). Ecosystems in this domain are subject to seasonal fluctuations in precipitation and temperature, which results in vegetation such as prairie, broadleaf deciduous forest, and evergreen conifer forests. These areas also experience high humidity, absence of very cold winters, ample rainfall heaviest in summer months, severe thunderstorms frequent in summer months, possibility of tropical hurricanes, and a moderately wide range of temperatures (Bailey, 2014; NOAA, 2022). New Jersey precipitation has been highly variable since 2013 with wetter than average conditions, and a high number of extreme events between 2005 and 2014.

The Climate Exposure Summary from the Defense Climate Assessment Tool (DCAT) for the Dix area of JB MDL is provided in Appendix C. In Burlington and Ocean Counties, the majority of the property damages associated with extreme weather/wildfire between 2000 and 2021 resulted from riverine and lakeshore flooding (DOD 2024). Riverine and lakeshore flooding accounted for 21% of the extreme weather and wildfire events and 86% of the damage. The DOD (2024) projects that the dominant climate hazard expected in the future is drought. This is based on two climate epochs (a 30-year average centered on 2050 [2035-2064] and another centered on 2085 [2070-2099]) based on the high Representative Concentration Pathway (RCP) 8.5. The RCPs are the emission trajectories and resultant radiative forcing used in climate modeling studies. Current emissions are tracking closely to the RCP 8.5, but DOD (2024) also provides projections for RCP 4.5.

New Jersey has experienced an increase in air temperatures of more than 3.5°F since the early 1900s and temperatures are expected to increase under both high and low emission scenarios. Unprecedented warming is projected for this century under the high emission scenario with heat waves projected to be more intense and less intense cold waves. Winter and spring precipitation and extreme precipitation events are projected to increase in the future (NOAA, 2022). The DOD (2024) projects that 5-day maximum temperature in the Dix area of JB MDL is currently 93°F but could increase to as high as 100°F in 2050 and 104°F in 2085. These projections are based on RCP 8.5.

The project area is in the New Jersey Pine Barrens and more specifically in the Training Impact Area of the Dix area, which is dominated by fragmented stands of pine and oak. The balance of pine and oak and therefore the ability of the forest to sequester carbon is determined by historic land use and land management. The Training Impact Area has had a history of deforestation and a “let it burn” policy since the 1930’s. Scheller et al. (2011) concluded that carbon in the NJPB is recovering from extensive historic disturbances and that “carbon will continue to steadily accrue over the next 100 years despite an active regime and fire management activities.” As recently as April 2023, JB

MDL assisted the NJ Forest Fire Service and local firefighters in containing a major wildfire that burned approximately 3,859 acres in Manchester Township (Knox 2023).

### **3.3 AIR QUALITY**

The U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) for six criteria pollutants. NAAQS are classified as either primary, which protects against adverse health impacts, or secondary, which protects against adverse welfare impacts. Areas that are and have historically complied with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that violate a federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment. The Clean Air Act requires states to develop a State Implementation Plan to attain the standards for each area designated nonattainment for a NAAQS.

The six criteria pollutants are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone (O<sub>3</sub>), suspended particulate matter (measured less than or equal to 10 microns in diameter [PM<sub>10</sub>] and less than or equal to 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead. CO, sulfur oxides (SO<sub>x</sub>), and some particulates are emitted directly into the atmosphere from emissions sources. Nitrogen dioxide, O<sub>3</sub>, and some particulates are formed through atmospheric and chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compounds (VOC) and nitrogen oxide (NO<sub>x</sub>) emissions are precursors of O<sub>3</sub> and are used to represent O<sub>3</sub> generation. Lead emissions from common air emissions sources are negligible because leaded fuels were phased out in the 1970s and 1980s. Therefore, lead is not included in the air quality analysis. The proposed action is in Ocean County, New Jersey, which is within the Metropolitan Philadelphia Interstate Air Quality Control Region (40 CFR § 81.15). The USEPA has designated Ocean County as marginal nonattainment for the 2008 and 2015 8-hour O<sub>3</sub> NAAQS.

### **3.4 WATER RESOURCES**

#### **3.4.1 Regulatory Framework**

“Waters of the United States” are regulated under Sections 401 (33 United States Code [USC] 1341) and 404 (33 USC 1344) of the Federal Clean Water Act. The primary federal regulations and guidance that govern water resources development, usage, and discharge at federal sites, or sites affected by federal activities, include the following:

- Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977 and 1987 (33 USC 1251 et seq.)
- Land and Water Conservation Act of 1976 (16 USC 460)
- National Pollutant Discharge Elimination System Wastewater Permits (33 USC 1342)
- Pollution Prevention Act of 1990 (42 USC 13101-13109)
- Safe Drinking Water Act of 1974 (42 USC 300f et seq.)
- Soil and Water Resources Conservation Act of 1977 (16 USC 2001)
- Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; 40 CFR §300)
- Emergency Planning and Community Right-to-Know Act of 1986 (42 USC 11011)

- Water quality programs in general (33 USC 1160 et seq. and 1251 et seq., 42 USC 300f et seq., and 6901 et seq.)
- Water Resources Development Act of 1990 (33 USC 2309a, 2316, and 2320)
- Wild and Scenic Rivers Act of 1968 (16 USC 1271 et seq.)
- Energy Independence and Security Act of 2007, Section 438 Stormwater Management
- AFMAN 32-1067, Water and Fuel Systems
- AFMAN 32-7003, Environmental Conservation, April 20, 2020
- EO 11988, Floodplain Management, May 24, 1977
- EO 11990, Protection of Wetlands, May 24, 1977
- EO 11991, Protection and Enhancement of Environmental Quality, May 24, 1977
- EO 12856, Federal Facilities Compliance with the Toxic Release Inventory requirements of Title III, Section 313 of Superfund Amendments and Reauthorization Act, August 3, 1993.

Water resources at JB MDL are also regulated under the jurisdiction of the NJDEP. The NJDEP has the primary responsibility for protecting New Jersey's surface and ground waters from pollution caused by improperly treated wastewater and its residuals, as well as the destruction of watersheds from development. The relevant New Jersey regulations and guidance for water resources within JB MDL include the following:

- NJ Water Pollution Control Act (N. J. S. A. 58:10A-1 et seq.)
- Stormwater Management (N. J. A. C. 7:8)
- Water Quality Planning Act (N. J. S. A. 58:11A-1 et seq.)
- Spill Compensation and Control Act (N. J. S. A. 58:10-23. 11 et seq.)
- Safe Drinking Water Act (N. J. S. A. 58:4A-4. 1 et seq.)
- NJ Ground Water Quality Standards (N. J. S. A. 58:12A-1 et seq.)
- Water Pollution Control Act (N. J. A. C. 7:14)
- Freshwater Wetlands Protection Act (N. J. S. A. 13:9B-1 et seq.)
- Flood Hazard Area Control Act (N. J. S. A. 58:16A-50 et seq.)

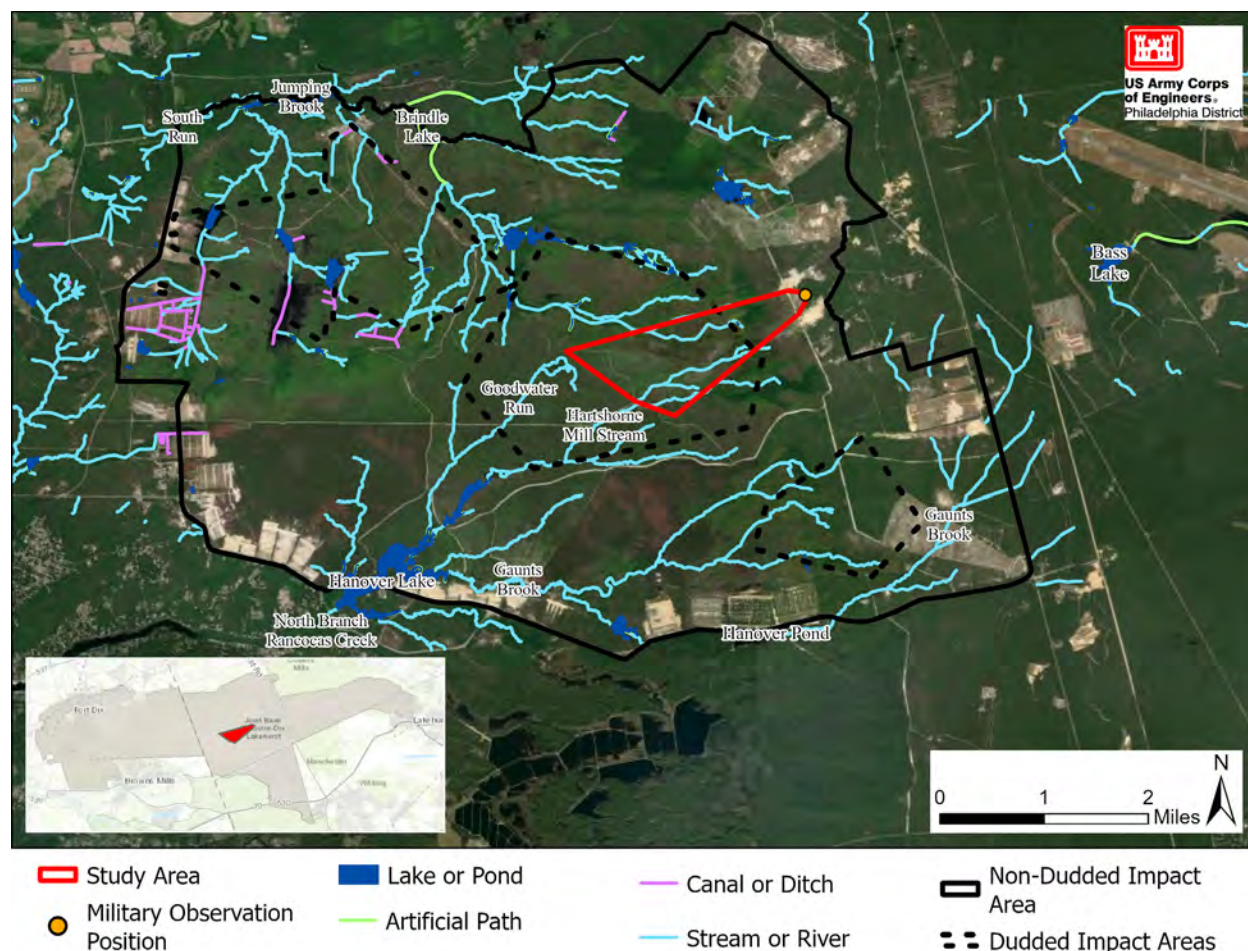
Water resources at JB MDL, as applicable, are managed according to these and other applicable environmental laws and regulations.

### **3.4.2 Surface Water Resources**

Surface water resources at JB MDL consist of seven major streams: Ridgeway Brook, Assiscunk Creek, Crosswicks Creek, Rancocas Creek, Manapaqua Brook, North Ruckles Branch and the Toms River.

Tributaries that traverse the project area (see Figure 3-1) include:

- Harthstone Mill Stream, which terminates in Hanover Lake (an impoundment of the North Branch Rancocas Creek).
- Tributaries of Jumping Brook, which terminate in Brindle Lake (in the Crosswick Creek watershed).



**Figure 3-1. Streams and other Water Resources In and Near the Project Area**

Hanover Lake and Brindle Lake are both man-made impoundments.

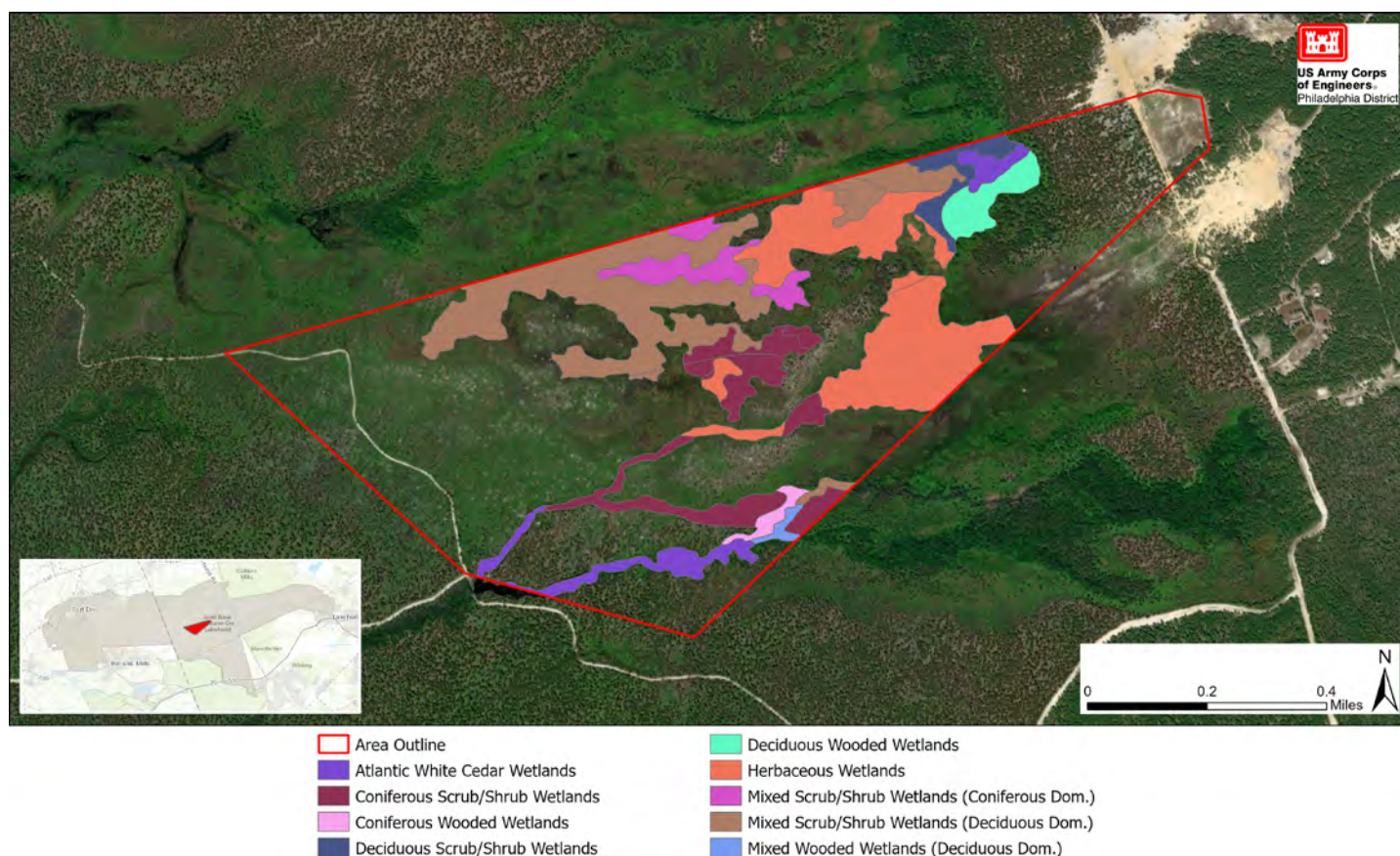
Rancocas Creek is the only major Pinelands stream that flows west and drains into the Delaware River. Pinelands streams are slow moving, warm, largely forest-covered, and shallow. The waters are low in nutrients, turbidity, and dissolved solids and high in acidity and dissolved iron (USAF, 2021).

### 3.4.3 Wetlands

A total of 9,353 acres are classified as wetlands at JB MDL (USAF, 2021). Wetlands delineated at JB MDL are primarily palustrine. A palustrine wetland is an inland wetland that contains ocean derived salts in concentrations of less than 0.5 parts per thousand and is non-tidal. Wetlands in the Dix area have not been formally delineated, except on a case-by-case basis (USAF, 2021). Because the project area is in the Training Impact Area with UXO, the wetlands cannot be delineated. Based on 2020 NJDEP Landcover Data, there are 144 acres of wetland habitats in the project area (see Table 3-1 and Figure 3-2). The fact that these wetlands are consistently exposed to active live fire training, they are continually being disturbed and in various stages of succession.

**Table 3-1. Wetlands in the Project Area**

Vegetation Type	Acres
Atlantic White Cedar Wetlands	10
Coniferous Scrub/Shrub Wetlands	20
Coniferous Wooded Wetlands	2
Deciduous Scrub/Shrub Wetlands	5
Deciduous Wooded Wetlands	6
Herbaceous Wetlands	44
Mixed Scrub/Shrub Wetlands (Coniferous Dom.)	9
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	46
Mixed Wooded Wetlands (Deciduous Dom.)	1
<b>TOTAL</b>	<b>144</b>

**Figure 3-2. Wetlands in the Project Area**

### **3.5 SAFETY AND OCCUPATIONAL HEALTH**

OP 59C is the only location within the range area where indirect fire can be observed, and all indirect fire must be observed to be fired safely. Indirect fire that cannot be observed must be ceased for safety. Currently only 15% of available targets can be observed within the impact area.

UXO are a known concern for safety in the Training Impact Area. UXO are any munitions, weapon delivery systems, or ordnance items that contain explosives, propellants, or chemical agents. The primary safety concern associated with UXO is the potential for detonation or chemical exposure.

### **3.6 HAZARDOUS MATERIALS / WASTE**

The transport, handling, and storage of jet fuels, fuel oils, diesel fuel, gasoline, waste oil and hazardous substances is an integral part of the military mission and facility support at JB MDL. Information on the storage and handling of oils and hazardous substances is provided in detail as part of the installation's Discharge Prevention, Containment and Countermeasures and Discharge Cleanup and Removal Plans (DPCC/DCR), the Spill Prevention, Containment and Countermeasure plan (SPCC), and the Integrated Contingency Plan. These plans show the locations of storage areas, tank farms, secondary containments, material loading/unloading areas, and list the types and capacities of stored materials. The plans document the installation's efforts in protecting stormwater and environmentally sensitive areas from accidental discharge contamination. Environmentally sensitive areas, such as water resources used by a water supply, wetlands and wetland transition areas, and the habitats of Federal and State endangered or threatened species, receive the highest priority for protection (USAF, 2021). UXO that reside inside of the Training Impact Area are also considered hazardous material.

### **3.7 BIOLOGICAL / NATURAL RESOURCES**

#### **3.7.1 Regulatory Framework**

Protection and management of biological resources at JB MDL is mandated by several laws, regulations, and guidance documents. The primary statutes, regulations, EOs, and guidance that direct, and apply to, the management of biological resources at the installation include the following:

- Endangered Species Act of 1973 (16 USC 1531 et seq.)
- Endangered Species Preservation Act of 1966 (16 USC 1531)
- Engle Act of 1958 (10 USC 2671)
- Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (7 USC 136)
- Federal Noxious Weed Act of 1975 (7 USC 2801)
- Fresh Water Pollution Control Act, as amended by the Clean Water Act (33 USC 1251 et seq.)
- Fish and Wildlife Conservation Act of 1980 (16 USC 2901 et seq.)
- Fish and Wildlife Coordination Act of 1934 (16 USC 661 et seq.)
- Migratory Bird Conservation Act of 1966 (16 USC 715)
- Migratory Bird Treaty Act of 1918 (16 USC 703-711)

- Sikes Act of 1960 (16 USC 670 et seq.), as amended.
- Air Force Manual 32-7003, Environmental Conservation
- EO 11987, Exotic Organisms, May 24, 1977
- EO 11988, Floodplain Management, May 24, 1977
- EO 11990, Protection of Wetlands, May 24, 1977
- EO 11991, Protection and Enhancement of Environmental Quality, May 24, 1977
- Pinelands Comprehensive Management Plan (N. J. S. A. 13:18A-1 et seq., N. J. A. C. 7:50 et seq.)
- NJDEP Freshwater Wetlands Protection Act (N. J. S. A. 13:9B-1 et seq.)
- NJDEP Flood Hazard Area Control Act (N. J. S. A. 58:16A-50 et seq.)

### 3.7.2 Integrated Natural Resource Management Plan

Natural resources within JB MDL are managed in accordance with its INRMP. The INRMP provides detailed descriptions of the natural resources present at JB MDL; identifies management goals; and establishes specific natural resources management activities. The INRMP was developed in cooperation with the USFWS and the New Jersey Division of Fish and Wildlife (USAF, 2021).

### 3.7.3 Vegetation

The JB MDL is classified within the Humid Temperate Domain, Hot Continental Division, Eastern Broadleaf Forest (Oceanic) Province, Upper Atlantic Coastal Plain Section (Bailey, 2014). Ecosystems in this domain are subject to seasonal fluctuations in precipitation and temperature, which results in vegetation such as prairie, broadleaf deciduous forest and evergreen conifer forests.

Of the total of 41,776 acres on the installation, 29,162 (24,609 on Dix, 4,230 on Lakehurst and 324 on McGuire) are wooded and not actively managed beyond occasional prescribed burning. Approximately 8,080 acres of the Dix area forest occurs in the Training Impact Area. This forest is actively managed through burning to reduce the potential of catastrophic wildfire.

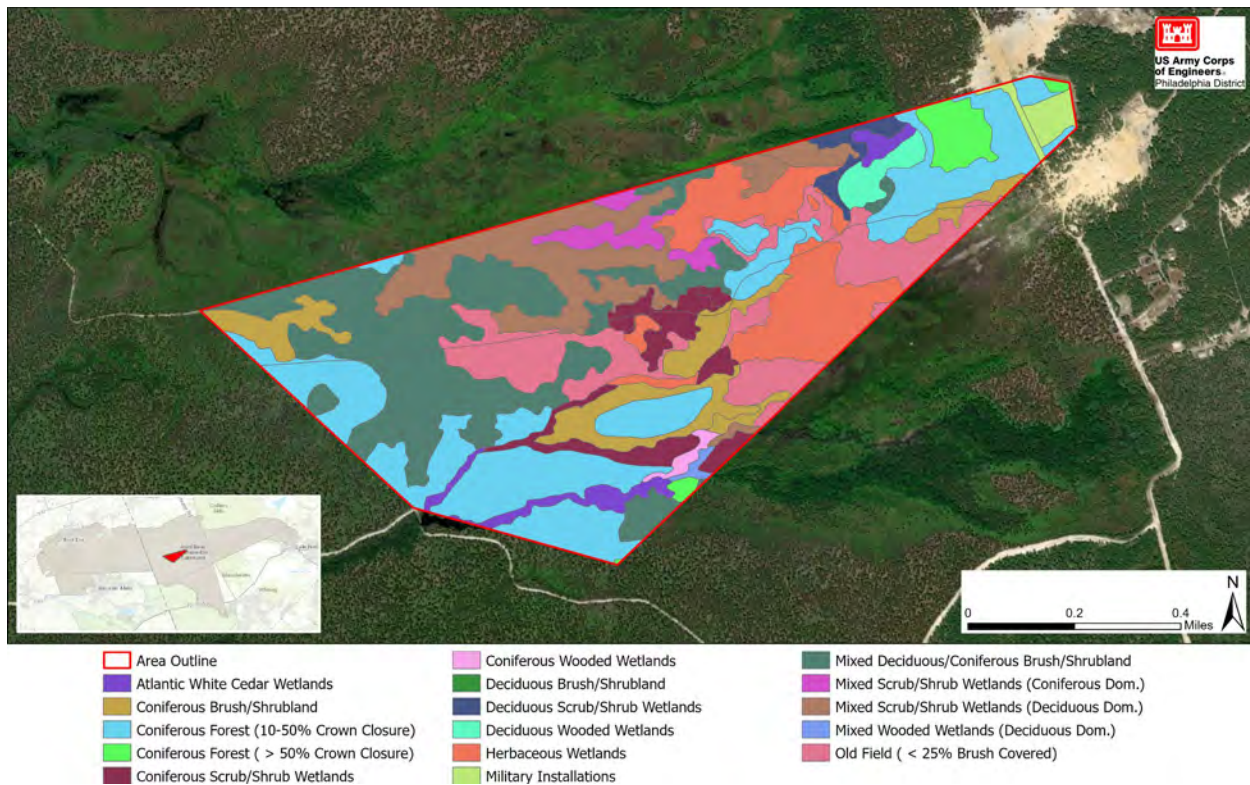
Vegetation in the Pinelands is characterized by a mix of pitch pine (*Pinus rigida*), Virginia pine (*Pinus virginiana*) and short leaf pine (*Pinus echinata*). Forest vegetation is divided into three major associations: mixed mesophytic, Appalachian oak, and pine-oak. Much of the installation is forested with pine/oak or oak/pine forest communities and includes an abundant understory vegetation of mountain laurel, blueberry, huckleberry, vines, grasses and wildflowers that provide excellent cover. The dense pine stands provide valuable evergreen cover throughout the critical winter months. Dense deciduous stands of red maple, sweet gum and black gum in wetland forests include thickets of native green briar in the understory that provide cover for wildlife (USAF, 2021).

Because of the presence of UXO, surveys cannot be conducted at the project area. Table 3-2 and Figure 3-3 show the vegetation in the project area based on 2020 NJDEP Landcover Data. The project area is in the Training Impact Area where intensively used training areas remain in various stages of succession due to frequent disturbance from training activities and the long-standing “let-it-burn” policy. Areas used less intensively are reverting to scrub/shrub vegetation and eventually become forested (USAF, 2021). Coniferous forest and mixed deciduous/coniferous brush/shrubland are dominant in the project area (see Table 3-2). Frequent fires from range training have provided the appropriate fire regime for JB MDL to have one of the largest remaining reed grass

savannahs on the east coast. Reed grass thrives in areas subjected to frequent fires (USAF, 2021).

**Table 3-2. Vegetation and Land Cover in the Project Area**

Vegetation/Land Cover Type	Acres
Atlantic White Cedar Wetlands	10
Coniferous Brush/Shrubland	33
Coniferous Forest (> 50% Crown Closure)	11
Coniferous Forest (10-50% Crown Closure)	100
Coniferous Scrub/Shrub Wetlands	20
Coniferous Wooded Wetlands	2
Deciduous Brush/Shrubland	0
Deciduous Scrub/Shrub Wetlands	5
Deciduous Wooded Wetlands	6
Herbaceous Wetlands	44
Military Installations	6
Mixed Deciduous/Coniferous Brush/Shrubland	88
Mixed Scrub/Shrub Wetlands (Coniferous Dom.)	9
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	46
Mixed Wooded Wetlands (Deciduous Dom.)	1
Old Field (< 25% Brush Covered)	50
<b>TOTAL</b>	<b>432</b>



**Figure 3-3. Vegetation/Land Cover in the Impact Project Area**

### 3.7.4 Wildlife

Vegetation in various stages of succession is expected to contain a variety of wildlife habitat generalists and specialists. Habitat generalists may include species like American robins (*Turdus migratorius*) and white-tailed deer (*Odocoileus virginianus*) (USAF, 2021). Specialists may be found in the reed grass savannah ecosystem which is found in the impact area (but not necessarily the project area) as a result of the number of wildfires caused by exploding ordnances. The reed grass savannah ecosystem harbors several uncommon species, such as the savannah sparrow (*Ammodramus savannarum pratenis*), arogos skipper (*Atryone arogos*), and silver-bordered fritillary (*Bolaria selene myrina*) (USAF, 2021).

No wildlife surveys have been conducted in the impact areas in recent years due to the UXO.

### 3.7.5 Special Status Species

Threatened, endangered, and other special status species that may occur at JB MDL include:

- Federally and State endangered American chaffseed (*Schwalbea americana*);
- Federally threatened and State endangered Knieskern's beaked rush;
- Federally threatened and State endangered swamp pink (*Helonias bullata*);
- Federally threatened and State endangered bog turtle (*Glyptemys muhlenbergii*);
- Federally threatened and State candidate for listing northern long-eared bat (*Myotis septentrionalis*);

- Federally proposed endangered and State candidate for listing tricolored bat (*Perimyotis subflavus*);
- State endangered Arogos skipper (*Atrytone argos*);
- State threatened barred owl (*Strix varia*); and
- State endangered (breeding season) and threatened (non-breeding season) bald eagle (*Haliaeetus leucocephalus*).

**American Chaffseed.** American chaffseed is a hemiparasitic (i. e., uses water and other nourishment from other plants) herbaceous plant (plant with leaves and stem) that requires frequent fire or understory removal (USAF, 2021). It occurs in sandy (sandy peat, sandy loam), acidic, seasonally moist to dry soils (USFWS, 2014). It is generally found in early successional habitats described as open, moist pine flatwoods, fire-maintained savannahs, ecotonal areas between peaty wetlands and xeric (dry) sandy soils, bog borders, and other open grass-sedge systems. American chaffseed is dependent on factors such as fire, mowing, or fluctuating water tables to maintain the crucial open to partly open conditions that it requires. The species appears to be shade intolerant. Based on these habitat characteristics, habitat for American chaffseed could occur in the project area.

**Knieskern's Beaked-Rush.** Knieskern's beaked-rush is a plant that is endemic to New Jersey (USFWS, 2015). An obligate wetland species, Knieskern's beaked-rush occurs in early successional wetland habitats, often on bog-iron substrates adjacent to slow-moving streams in the Pinelands region. It is possible that habitat for Knieskern's beaked-rush exists within the project area. Human-influenced habitats include abandoned borrow pits, clay pits, ditches, rights-of-way and unimproved roads. It is often associated with other sedge and grass species. However, it is intolerant of shade and competition, especially from woody species, and is sometimes found on relatively bare substrate. At JB MDL, it is known to occur in the Lakehurst Jump Circle where vegetation is managed with prescribed fire and mowing (USAF, 2021). Habitat for this species could occur in the project area.

**Swamp Pink.** Swamp pink is one of the first wildflowers to appear in the spring. The plant typically flowers from March through the middle of May (USAF, 2021). An obligate wetland species, swamp pink is frequently found on hummocks formed by trees, shrubs, and sphagnum moss occurs in a variety of palustrine forested wetlands including swampy forested wetlands bordering meandering streamlets, headwater wetlands, sphagnum Atlantic white-cedar swamps, and spring seepage areas (USFWS, 2016). Specific hydrologic requirements of swamp pink limit its occurrence within these wetlands to perennially saturated areas, but not inundated by floodwater. The water table must be at or near the surface, fluctuating only slightly during the spring and summer months. Groundwater seepage with lateral groundwater movement is a common hydrologic characteristic of swamp pink habitat. The nearest occurrence of swamp pink is more than 1.5 miles from the project area.

**Bog Turtle.** Bog turtles inhabit open, wet meadows and bogs with standing or slow-moving water over mucky substrates (USFWS, 2020). Bog turtles prefer areas with good sunlight, high evaporation rates, high humidity in the near-ground microclimate, and perennial saturation of portions of the ground. Suitable habitat exists on all three areas, of JB MDL but succession and beaver activity have made many areas of the base unsuitable for bog turtles. The only confirmed sightings are on the Lakehurst Area

(USAF, 2021). The nearest occurrence of bog turtle is more than 4 miles from the project area.

**Northern Long-Eared Bat.** The northern long-eared bat is found across much of the eastern and north central United States. Northern long-eared bat summer nesting habitat occurs on JB MDL and includes cavities, crevices, and beneath the bark of dead and live trees. Roosting northern long-eared bats have also been observed in man-made structures such as buildings, barns, sheds, cabins, under eaves of buildings, and in bat houses. In southern New Jersey, the northern long-eared bat is known to roost in pitch pine forests and Atlantic white cedar (*Chamaecyparis thyoides*) swamps. Suitable summer roosting habitat for northern long-eared bats occurs in the project area. Suitable hibernacula areas for northern long-eared bat consist of large caves and abandoned mines, while suitable foraging habitat is described in more general terms as consisting of forested areas (USFWS, 2019b). JB MDL conducted acoustic bat monitoring surveys in 2012, 2014 and 2017 encompassing 63 miles of roadway and trails on the Lakehurst and Dix sections of JB MDL. The acoustical surveys identified acoustic calls associated with northern long-eared bats along the southern border of the Lakehurst section of JB MDL and the northern border of the Dix section of JB MDL. Mist Net Surveys conducted in 2015 (CTR Wildlife Consulting) and 2018 (USFWS) did not find any northern long-eared bats. Ten days after the conclusion of the 2018 mist net efforts, a northern long-eared bat was discovered roosting on the side of an engineering building on the Lakehurst side of the base. Mist netting with the USFWS continued in 2019, and sampling sites also included the forested wetlands located south of the engineering building previously mentioned. There are no known occurrences of northern long-eared bat within 2 miles of the project area. The project area is not within 0.25 miles of documented northern long-eared bat hibernaculum or 150 feet of a documented northern long-eared bat maternity roost (USFWS, 2021).

**Tricolored Bat.** Tri-colored bats have a broad range across the eastern and central United States and portions of southern Canada, Mexico and Central America. In the spring, summer and fall, tricolored bats roost in trees, primarily among leaves, in forested habitat. This species is typically forages over or near water. Suitable spring, summer, and fall habitat for tricolored bats occurs in the project area. In the winter, they hibernate in caves and abandoned mines. Tricolored bats are vulnerable to White-nose Syndrome caused by the fungus *Pseudogymnoascus destructans*, resulting in mortality rates that exceed 90% in infected caves and mines (USFWS, 2024). Tricolored bats are one of the first bat species to enter hibernation in the fall, and the last to emerge in the spring. They mate in large swarms just prior to hibernation, from late August to October, and in spring as well. Gestation averages around 44 days, and twin pups are born between May and June. Maternity colonies with different roosts average around 15 mother bats with their pups. Tricolored bats live for four to eight years, and some up to 14 years (USAF, 2021). JB MDL conducted acoustic bat monitoring surveys in 2012, 2014 and 2017 encompassing 63 miles of roadway and trails on the Lakehurst and Dix sections of JB MDL. The acoustical surveys identified acoustic calls associated with tricolored bats. Mist Net Surveys conducted in 2015 (CTR Wildlife Consulting) and 2018 (USFWS) did not find any tri-colored bats. There have been no surveys of tri-colored bats within the training impact area of JB MDL. There are no known occurrences of tri-colored bats within 6 miles of the project area. The project area is not within 0.25 miles of documented tri-colored bat hibernaculum or 150 feet of a documented tri-colored bat maternity roost (USFWS, 2021).

**Arogos Skipper.** This small butterfly has found one of its remaining strongholds in the reedgrass savannahs of Training Impact Area of the Dix Ranges. The species is considered critically imperiled on a global scale and many of the remaining populations are in NJ. It prefers grasslands with warm season grasses for its larval stage and wildflowers with available nectar during July and August. These grassland savannahs are created in the Training Impact Area due to repeated summer fires that result from ordnance firings into this area (USAF, 2021). This species lives in areas where recent fires have occurred due to the creation of grasslands.

**Barred Owl.** Barred owls live and breed in large, unbroken stands of mature lowland, upland deciduous, or mixed coniferous/deciduous forests. In 2007, an in-house habitat assessment for the barred owl on the Dix Area was performed and owl call back surveys were completed in suitable areas in 2007-2009. The survey found 13 barred owls on the Dix Area, including 4 sets of owls calling as a breeding pair (USAF, 2021).

**Bald Eagle.** A nesting pair of Bald eagles were discovered on the Dix Area in the spring of 2000 in a large pitch pine located in a pitch pine/scrub oak forest in the Impact Area. This pair had remained at Dix and has successfully raised sixteen eaglets as of 2015. In the winter of 2017, the nest tree fell, and the eagles have not nested in this area since then (JB MDL, 2021). Prior to August 2007 this species was listed as Federally threatened. The bald eagle continues to be protected under the Federal Bald and Golden Eagle Protection Act (16 U.S. C. 668a-d) and the Migratory Bird Treaty Act (40 Stat. 755 as amended; 16 U.S. C. 703-112). The bald eagle also remains a State-listed species under the NJ Endangered and Non-game Species Conservation Act (N. J. S. A 23:2 A et seq.), which carries protection under the State Land Use Regulation Program. (JB MDL, 2021).

### 3.8 CULTURAL RESOURCES

The term “cultural resources” is a broad term that includes but is not limited to historic and prehistoric archaeological sites, deposits, and features; burials and cemeteries; historic and prehistoric districts comprised of groups of structures or sites; cultural landscapes; built environment resources such as buildings, structures (such as bridges), and objects; Traditional Cultural Properties (TCP) and sacred sites. These property types may be listed on the National Register of Historic Places (NRHP) if they meet the criteria specified by 36 CFR 60.4 as authorized by the NHPA, reflecting significance in architecture, history, archaeology, engineering, and culture. Cultural resources that are identified as eligible for listing in the NRHP are referred to as “historic properties,” regardless of category. A TCP is a property that is eligible for inclusion in the NRHP based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. Ceremonies, hunting practices, plant gathering, and social practices which are part of a culture’s traditional lifeways, are also cultural resources.

Cultural resources management at JB MDL is provided in accordance with Sections 106 and 110 of the National Historic Preservation Act (NHPA), the Archeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), the Native American Graves Protection and Repatriation Act (NAGPRA), DoD Directive 4715. 03 (Archeological and Historic Resources Management, 1984) and AFMAN 32-7003 (Environmental Conservation, Chapter 2, Cultural Resources Management).

The objective of the cultural resources program at JB MDL is to ensure that the installation is in compliance with all cultural resources laws and regulations. The purpose of the program is to identify and evaluate cultural resources that have the potential for listing in the NRHP. Cultural Resources reviews are conducted for projects that could affect listed, eligible and potentially eligible historic resources, and provide recommendations to avoid, minimize, or mitigate adverse effects on those resources (USAF, 2021).

The historic properties identified on JB MDL include numerous archaeological sites, buildings, structures, districts, and/or objects included on or eligible for inclusion on, the NRHP including artifacts, records, and material remains relating to the site, building, structure, district or object. The historic properties include:

- One National Historic Landmark
- One NRHP listed archaeological historic property
- Four eligible historic districts
- Three eligible historic buildings
- Seven eligible historic archaeological sites
- Three eligible indigenous archaeological sites

None of these historic properties exist within the project area. A more detailed list of the JB MDL historic properties can be found in the report titled, *US Air Force Integrated Cultural Resource Management Plan, Joint Base McGuire-Dix-Lakehurst* dated September 30, 2022. Historic archaeological sites at JB MDL cluster along roads that date to the nineteenth century, most of which are located west of the project location. There have been no surveys for indigenous archaeological sites in the Training Impact Area. Previous cultural surveys at JB MDL have not found historic archaeological sites near the project location. Three NRHP eligible prehistoric archaeological sites (28BU526, 28BU689 and 28OC67) have been identified at Dix, with artifacts relating to food processing and manufacturing activities representative of short-term foraging occupations from approximately 12,000 B. C. to A. D. 1600 (USAF, 2021).

No indigenous human remains or TCPs have been identified on JB MDL. JB MDL maintains government-to-government relationships with Federally recognized Tribes with ancestral ties to the land. In addition to archaeological sites, JB MDL contains historic structures eligible for or listed on the NRHP (USAF, 2021).

### **3.9 GEOLOGICAL RESOURCES**

#### **3.9.1 Geology**

JB MDL is located in Mid-Atlantic Coastal Plain. Past geologic processes have contributed to the soil formation, topography, hydrology, and vegetation of the Inner and Outer Coastal Plain physiographic regions. Early in the Cretaceous period (135 to 65 million years ago), the Inner Coastal Plain began accumulating sediments being carried down river from the Piedmont physiographic province. In the Tertiary period (65 to 1.75 million years ago) that followed, sea levels along the NJ coast rose and fell many times. Rising sea levels left behind marine sediments of sands, silts, clays, and gravels creating the Outer Coastal Plain. When the sea levels fell, erosion caused by streams and wind further shaped the region by carrying some of these materials back to sea (Collins 1994). Sediments deposited during the last cycle include the Cohansey Sand Formation comprised of unconsolidated, yellow quartz sand with gravel, silt, and clay.

The Cohansey Sand Formation is from 50 to 100 feet deep in the JB MDL area. Its sandy nature exerts a major influence on the region as soils that have developed are generally droughty, acidic, and low in nutrients. (USAF, 2021).

### 3.9.2 Topography

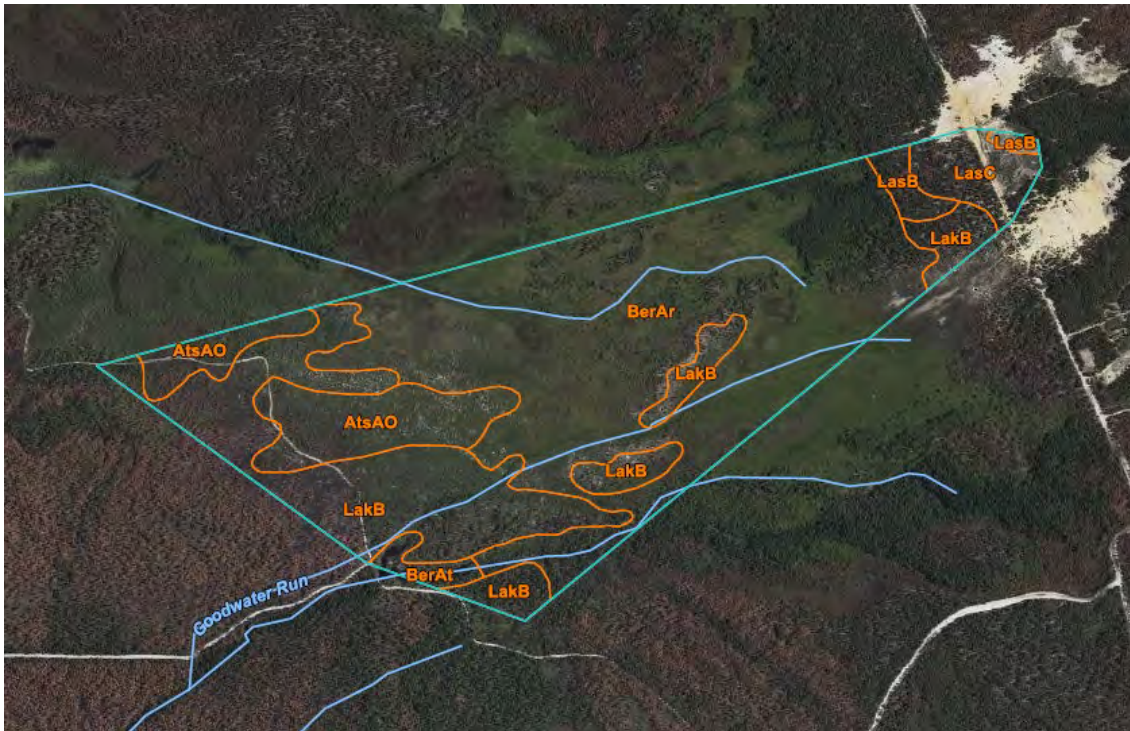
Elevations range between 100 to 200 feet above sea level in the Training Impact Area (NJ Geoweb Topographic Map, 2023). The highest elevation of the Training Impact Area being OP59C.

### 3.9.3 Soils

According to the USGS Soil Map Survey (2023), the Training Impact Area is comprised of four soil composites (see Table 3-3 and ). Berryland sand (57. 2%) and Lakehurst sand (26. 6%) make up the majority of the area soil. Atsion sand (10. 5%) and Lakewood sand (5. 8%) are present in smaller areas.

**Table 3-3. Soil Survey Map Legend**

Map Unit Symbol	Map Unit Name	Acres in Project Area	Percent of Project Area
<b>AtsAO</b>	Atsion sand, 0 to 2 percent slopes, Northern Tidewater Area	47. 6	10. 5%
<b>BerAr</b>	Berryland sand, 0 to 2 percent slopes, rarely flooded	253. 5	55. 8%
<b>BerAt</b>	Berryland sand, 0 to 2 percent slopes, frequently flooded	6. 2	1. 4%
<b>LakB</b>	Lakehurst sand, 0 to 5 percent slopes	120. 8	26. 6%
<b>LasB</b>	Lakewood sand, 0 to 5 percent slopes	8. 3	1. 8%
<b>LasC</b>	Lakewood sand, 5 to 10 percent slopes	18. 0	4. 0%
<b>Totals for Area of Interest</b>		454. 4	100. 0%



**Figure 3-4. Soil Survey Map for the Project Area**

## 4.0 ENVIRONMENTAL CONSEQUENCES

### 4.1 INTRODUCTION

Preparing an EA involves determining the significance or importance of environmental impacts associated with a Proposed Action. The Council on Environmental Quality (CEQ) regulations (40 CFR §§ 1500-1508), direct that this be done by considering two variables: “context” and “intensity.”

This chapter describes the potential environmental consequences likely to result from implementation of the alternatives being considered and analyzed. Impacts are evaluated in terms of type (positive/beneficial or adverse), context (setting or location), intensity (none, negligible, minor, moderate, severe), and duration (short-term/temporary or long-term/permanent). The type, context, and intensity of an impact on a resource are explained under each resource area. Unless otherwise noted, short-term impacts are those that would result from the activities associated tree clearing, and that would end after tree clearing is complete. Long-term impacts are generally those that would persist after tree clearing is complete and the OP59C LOS area is maintained.

### 4.2 CLIMATE, CLIMATE CHANGE, AND GREENHOUSE GASSES

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** Restoration of the OP 59C LOS Area Restoration would have minor short-term and long-term impacts on climate in the region. Construction equipment would be used to clear the trees would emit carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) during tree clearing (see Table 4-1). The annual emissions estimates assume that 279 acres of tree clearing would be conducted over a period of 5 years and assumes a production rate of 1.5 acres per day. This is a conservative annual estimate because tree clearing is dependent on funding and may occur up to 7 years. For context, annual emissions associated with the preferred alternative would be similar to the annual emissions associated with approximately 10 commuter cars (EPA 2023).

**Table 4-1. Greenhouse Gas Emissions Estimates (Tons)**

Activity			
	CO <sub>2</sub> (tons)	CH <sub>4</sub> (tons)	N <sub>2</sub> O (tons)
Annual Tree Removal	52	0. 00	0. 00

Notes:\*Annual estimate assumes that 279 acres of tree clearing is conducted over a period of 5 years and assumes a production rate of 1.5 acres per day. This is a conservative annual estimate because tree clearing is dependent on funding and may take up to 7 years.

Additionally, this alternative would result in the removal of 279 acres of forest that will be unable to sequester CO<sub>2</sub> emissions and other gases, resulting in minor long-term adverse impacts on regional climate. This impact is designated as minor because, while they incrementally contribute to the regional emissions of greenhouse gases, the trees

being cleared represent a small fraction of the forest in JB MDL. As trees would be felled and left in place, only aboveground carbon sequestration would be lost.

Maintenance of the OP59C LOS area would include prescribed burning as needed, which would result in additional release of carbon dioxide and methane. Maintenance of OP59C LOS area using prescribed fire would not increase greenhouse gas emissions. JB MDL intentionally burns an average of 4,500 acres annually, depending on weather conditions. Maintenance of the OP59C LOS area would be part of this program and therefore, does not constitute new emissions.

As discussed in Section 2.4, there are no practicable alternatives that obviate the need for tree clearing to avoid emitting GHGs. Minimization is likely through less frequent clearing (fewer mobilizations that emit CO<sub>2</sub>) and maintenance of the OP59C LOS area using prescribed burning. Implementing practices that reduce unneeded idling of engines will also be considered (NOS 2023).

**No Action Alternative.** The No Action Alternative would have no impact on the climate in the region. These 279 acres of forest would remain in place and would continue to sequester CO<sub>2</sub> emissions and other gases.

### 4.3 AIR QUALITY

General Conformity is a process to implement Section 176I of the Clean Air Act to ensure actions conducted or sponsored by Federal agencies in nonattainment or maintenance areas are consistent with the State Implementation Plan (SIP). General Conformity requires that reasonably foreseeable emissions from Federal actions will not cause or contribute to new violations of a NAAQS, increase the frequency or severity of existing NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone towards achieving attainment. However, a General Conformity determination is not required if the emissions from the federal action will fall below the *de minimis* levels set forth in the Clean Air Act Regulations.

The first step is a conformity applicability analysis of a general conformity evaluation and assesses whether a federal action must be supported by a general conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result from implementation of the federal action. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions thresholds, then the conformity evaluation process is completed, and a general conformity determination is not required. Compliance with General Conformity requirements can also be achieved by demonstrating the total net direct and indirect emissions increase from a preferred alternative are already accounted for in the State Implementation Plan emissions budget.

As stated previously, the project is in the Ocean County, New Jersey, located in the Philadelphia-Wilmington-Atlantic City Area marginal nonattainment for the 2008 and 2015 8-hour O<sub>3</sub> NAAQS. Therefore, the General Conformity Rule is potentially applicable to emissions of VOCs and NO<sub>x</sub> (because they are precursors for O<sub>3</sub>). As outlined in 40 CFR § 93.153(b), the applicable *de minimis* level threshold for these pollutants is 50 tons per year (tpy) for VOCs and 100 tpy for NO<sub>x</sub>. Ocean County is designated as attainment or unclassified for all other criteria pollutants (USEPA, 2023).

**Alternative 1 (Preferred Alternative).** Clearing the OP59C LOS area would result in temporary effects on local ambient air quality due to emissions and fugitive dust generated by construction

equipment. These temporary effects would not have a significant effect on the long-term air quality of the surrounding area.

The preferred alternative would result in the maintenance of existing regional air quality conditions of the nonattainment area for the 8-hour ozone NAAQS. There would be some minor, short-term effects during tree clearing. The use of diesel engines on trucks and robotic equipment would result in localized increases in NO<sub>x</sub>, VOCs, CO, SO<sub>2</sub> and PM<sub>2.5</sub> emissions. This effort would be similar to other forestry work. Based on the size of the operation and duration, air emissions are expected to be below the *de minimis* threshold for a moderate ozone nonattainment area. An emissions estimate for criteria pollutants is provided in Table 4-2 and Appendix C. The preferred alternative would meet *de minimis* thresholds for ozone (100 tons NO<sub>x</sub> and 50 tons VOCs per calendar year). The other pollutants are in attainment of NAAQS for Ocean County and *de minimis* thresholds do not apply. Therefore, a General Conformity determination is not required based on the expected *de minimis* level emissions along with the preferred alternative meeting the exemption for restoring OP59C LOS area under 40 CFR § 93.153 I(2)(ix).

**Table 4-2. Criteria Pollutant Emissions Estimates (Tons)**

	NO <sub>x</sub> (O <sub>3</sub> precursor) (tons)	VOC (O <sub>3</sub> precursor) (tons)	PM <sub>2.5</sub>	SO <sub>x</sub>	CO
Tree Clearing	2.64	0.11	0.02	0.00	0.12
Clean Air Act General Conformity Rule Limit (Threshold Tons/Year)	100	50	NA	NA	NA

Maintenance of OP59C LOS area would not affect criteria pollutant emissions. JB MDL intentionally burns an average of 4,500 acres annually, depending on weather conditions. Maintenance of the OP59C LOS area would be part of this program and therefore, does not constitute new emissions.

**No Action Alternative.** The No Action Alternative would have no impact on the air quality in the region. Construction equipment would not be used and not emission would occur under the No Action Alternative.

## 4.4 WATER RESOURCES

### 4.4.1 Surface Water

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** A 25-foot buffer will be retained around streams in the OP 59C LOS restoration area. Maintaining a buffer around streams would avoid potential negative impacts, such as an indirect increase in stream water temperatures with loss of tree canopy and shading and destabilization of soils near (riparian areas) and in stream areas from direct felling of trees into streams.

**No Action Alternative.** The No Action Alternative would not change surface waters and would have no impact on the surface waters.

### 4.4.2 Wetlands

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** The wetland vegetation that would be cut under Alternative 1 is provided in Table 4-3 and Figure 4-1.

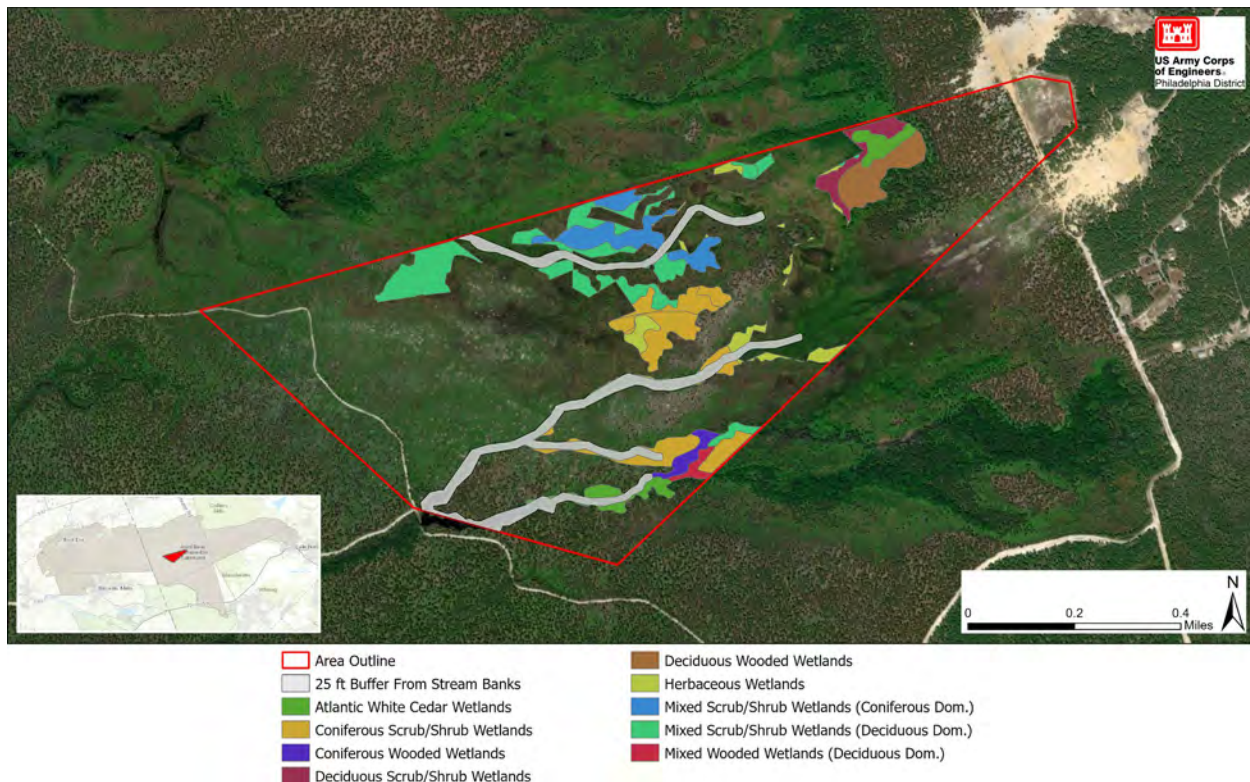
Trees and shrubs in wetlands would be cut to a maximum of 12 to 18 inches, but roots, stumps, and stems would remain in place. The proposed action would not result in a discharge of fill into wetlands; therefore, a permit would not be required. Additionally, wetlands in the project area have been historically cleared and are continually disturbed in this live fire training range, with a “let-it-burn” policy. The purpose and result of the cutting is to maintain the historic use as a live fire training route. Because of the historic disturbance, the wetlands in OP59C are in various stages of succession. Cutting trees and shrubs from approximately 64 acres of the OP59C LOS area would not change the nature and character of the wetlands. Approximately 80 acres of wetlands vegetation would be avoided and remain uncut.

These activities are considered mission-essential, necessary to maintain the use of the training area; therefore, there are no practicable alternatives that obviate the need for tree clearing to avoid impacts on wetlands.

**No Action Alternative.** The No Action Alternative would not change wetlands and would have no impact on waters and wetlands.

**Table 4-3. Wetland Vegetation with the Potential to be Cut during the OP59C LOS Restoration Activities**

Vegetation Type	Acres
Atlantic White Cedar Wetlands	5
Coniferous Scrub/Shrub Wetlands	14
Coniferous Wooded Wetlands	2
Deciduous Scrub/Shrub Wetlands	3
Deciduous Wooded Wetlands	6
Herbaceous Wetlands	5
Mixed Scrub/Shrub Wetlands (Coniferous Dom.)	8
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	18
Mixed Wooded Wetlands (Deciduous Dom.)	1
<b>TOTAL</b>	<b>64</b>



**Figure 4-1. Wetlands with the Potential to be Cut during OP59C LOS Restoration Activities**

#### 4.5 SAFETY AND OCCUPATIONAL HEALTH

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** The primary safety concern under the preferred alternative is the UXO that reside inside the Training Impact Area. Mechanical robotic clearing is the safest alternative to remove the vegetation, because the UXO makes it impossible to safely enter the area.

**No Action Alternative.** The No Action Alternative would result in safety risks for personnel that use the OP 59C LOS Training area. The current conditions create an unsafe environment and places soldiers and/or property at risk. Indirect fire is a critical part of artillery units' mission. The OP 59C is the only location within the range area where indirect fire can be observed, and all indirect fire must be observed to be fired safely. Indirect fire that cannot be observed must be ceased for safety. Currently only 15% of available targets can be observed within the impact area. If no action is taken and trees continue to grow, all targets will be obscured. If training is allowed to continue under existing conditions, there would be a risk of injury to personnel, including neighboring units, and damage to the range equipment and targets. If artillery and mortar training are prohibited because of the current conditions, it would result in a risk to National Security, as the Artillery and Infantry Battalions of the Army would not be prepared with proper training.

#### 4.6 HAZARDOUS MATERIALS / WASTE

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** Hazardous materials used during proposed restoration would include gasoline, diesel fuel, and other

petroleum, oils, and lubricants typical in maintaining and operating vehicles and equipment. The usage of these materials would be temporary and are not expected to result in a significant increase in the number of hazardous wastes inside of the impact training area. All hazardous materials and wastes must be handled, stored, transported, and disposed of in accordance with applicable base policies, as well as local, state, and federal laws. Therefore, for the preferred alternative, there would be no significant impacts expected to result.

**No Action Alternative.** The No Action Alternative would not involve the need to store or dispose of hazardous materials. No impacts would be anticipated to hazardous materials or waste because of the No Action Alternative.

## 4.7 BIOLOGICAL / NATURAL RESOURCES

### 4.7.1 Vegetation

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** Using robotic mechanical tree and shrub cutting to restore the line of sight at OP59C and prescribed fire to maintain it would have direct long-term impacts on vegetation. Vegetation would be removed to a height of 12 to 18 inches. This would affect approximately 0.6% of total JB MDL forested areas. The removal of the vegetation is necessary to facilitate an effective and safe training environment. Because the vegetation in the live fire training area is already disturbed and because such a small area is being impacted relative to vegetation on the installation, impacts would be minor. The impacts are not expected to change the overall character of the Training Impact Area.

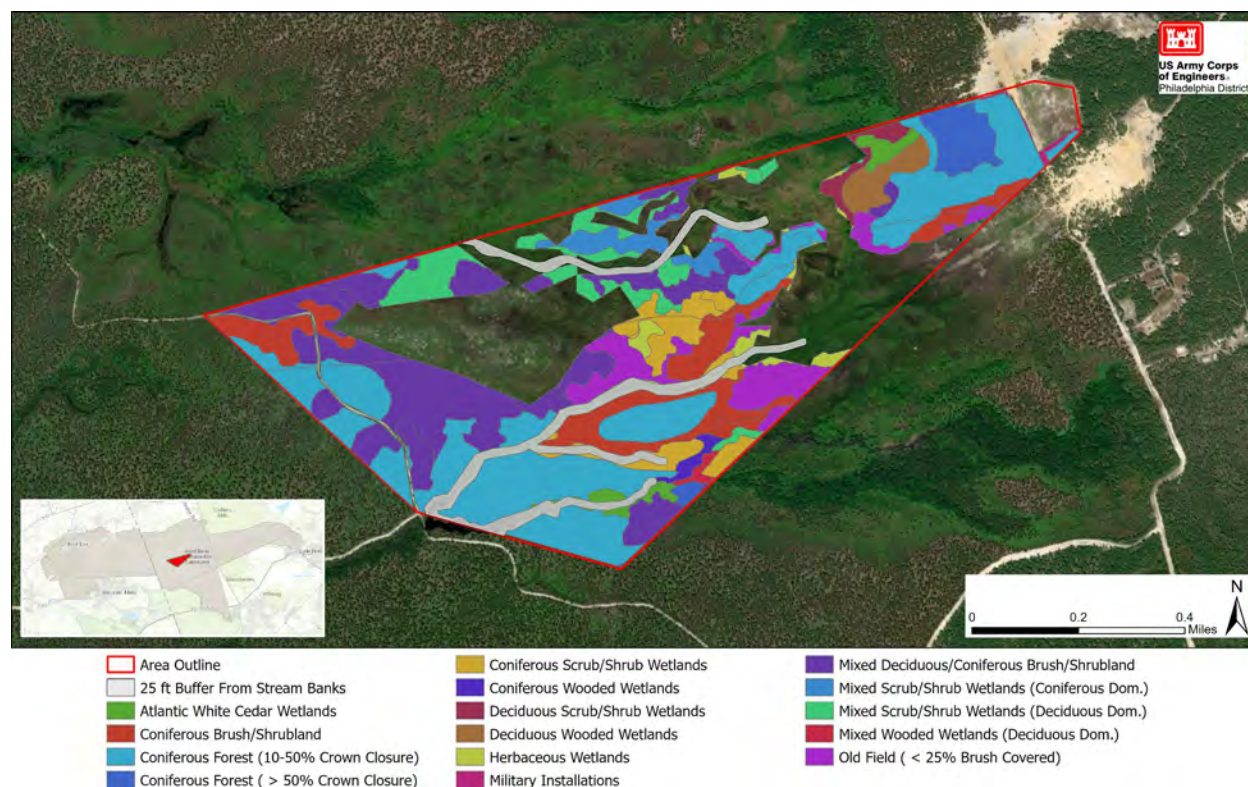
The project area and the surrounding Training Impact Area have been historically and currently still are intensively used training areas, which remain in an early successional stage due to frequent disturbance from training activities. Some of these areas are now used less intensively and have reverted to scrub/shrub vegetation and will eventually become forested. This is what occurred at OP59C. The JB MDL (2020) INRMP indicates that some of these areas should be kept open to maintain early successional habitat to provide for diverse wildlife habitat. Clearing of OP59C is needed to maintain the functionality (as described in Section 2.4) and is also consistent with this goal in the INRMP.

Table 4-4 and Figure 4-2 provide an estimate of vegetation that would be removed by the OP59C LOS restoration. Because UXO is present, vegetation surveys cannot be conducted in the project area. The NJDEP 2020 landcover data was used to estimate vegetation impacts from the LOS restoration.

**Table 4-4. Vegetation Potentially Cut by OP59C LOS Restoration Activities**

Vegetation Type	Acres
Atlantic White Cedar Wetlands	5
Coniferous Brush/Shrubland	31
Coniferous Forest (> 50% Crown Closure)	10
Coniferous Forest (10-50% Crown Closure)	92
Coniferous Scrub/Shrub Wetlands	14

Coniferous Wooded Wetlands	2
Deciduous Scrub/Shrub Wetlands	3
Deciduous Wooded Wetlands	6
Herbaceous Wetlands	5
Military Installations	1
Mixed Deciduous/Coniferous Brush/Shrubland	61
Mixed Scrub/Shrub Wetlands (Coniferous Dom.)	8
Mixed Scrub/Shrub Wetlands (Deciduous Dom.)	18
Mixed Wooded Wetlands (Deciduous Dom.)	1
Old Field (< 25% Brush Covered)	21
<b>TOTAL</b>	<b>279</b>



**Figure 4-2. Vegetation Potentially Cut during OP59C LOS Restoration Activities**

**No Action Alternative.** The No Action Alternative would not involve the removal of vegetation and would not impact vegetation.

#### 4.7.2 Wildlife

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** Robotic vegetation cutting and prescribed burns would temporarily alter successional habitat in the project area. Vegetation clearing activities would temporarily displace wildlife and potentially result in the loss of some wildlife. It is anticipated that most of the wildlife would clear the project area without being harmed. Tree and shrub cutting would not occur from March 31 through September 30, which would protect migratory birds. Prescribed burns result in long term, beneficial impacts as they promote healthy, sustainable forest ecosystem. The JB MDL INRMP indicates that some of these areas should be kept open to maintain early successional habitat to provide for diverse wildlife habitat (USAF 2021). Clearing of OP59C is needed to maintain the functionality of the training range (as described in Section 2. 4) and is also consistent with this goal in the INRMP.

**No Action Alternative.** The No Action Alternative would not involve the removal of habitat and would not impact wildlife.

#### 4.7.3 Special Status Species

**Alternative 1: OP 59C LOS Area Restoration (Preferred Alternative).** Restoration of the OP59C LOS area would have negligible effects on special status species, as described in the subsequent paragraphs. Due to the hazard of UXO in the area, on site surveys were not able to be conducted. However, 2020 NJDEP landcover data was used to identify habitat that could support the special status species known to occur on the installation.

**American Chaffseed.** While it is possible that suitable habitat for American chaffseed exists within the project area, proposed vegetation cutting and prescribed fire for maintenance could help to encourage habitat development for this species. If possible and necessary, seasonal restrictions could be implemented to protect individual plants during clearing and prescribed fire.

**Knieskern's Beaked-Rush.** It is possible that habitat for Knieskern's beaked-rush exists within the project area; however, it is unlikely that tree and shrub cutting would occur where it is present, as this species is intolerant of shade. It is possible that the long-term maintenance of the OP59C LOS area using prescribed fire would encourage habitat development for Knieskern's beaked rush. If possible and necessary, seasonal restrictions could be implemented to protect individual plants during clearing and prescribed fire.

**Swamp Pink.** The nearest occurrence of swamp pink is more than 1.5 miles from the project area. As such, restoration of the OP59C LOS area is not expected to impact swamp pink.

**Bog Turtle.** The nearest occurrence of bog turtle is more than 4 miles from the study area and bog turtle is not expected within the project area. As such, restoration of the OP59C LOS area is not expected to impact bog turtle.

**Northern Long-Eared Bat.** Restoration of the OP59C LOS area could result in negligible effects on northern long-eared bat summer habitat. To avoid impacts on northern long-eared bats, tree and shrub cutting would occur during the inactive season, from October 1 through March 31. Tree and shrub cutting would be spread evenly through the 5 to 7 phases/years, to the extent that funding would allow. The goal would be to clear 40 to 60 acres each year. Additionally, cutting of approximately 21 acres of coniferous (>50% crown closure) and Atlantic white cedar forest which serves as high-quality habitat, would be spread evenly across the 5 to 7 phases, to the extent that funding will allow. That is, no more than approximately 5 acres of higher quality bat habitat would be cut per year. This would reduce the habitat impact in any given year, and potentially prevent the bats having to shift foraging and roosting areas during any one of the phases.

**Tricolored Bat.** Restoration of the OP59C LOS area could result in negligible effects on tri-colored habitat. To avoid impacts on tri-colored bats, tree and shrub cutting would occur during the inactive season, from October 1 through March 31. Tree and shrub cutting would be spread evenly through the 5 to 7 phases/years, to the extent that funding would allow. The goal would be to clear 40 to 60 acres each year. Additionally, cutting of approximately 21 acres of coniferous (>50% crown closure) and Atlantic white cedar forest which serves as high-quality habitat, would be spread evenly across the 5 to 7 phases, to the extent that funding will allow. That is, no more than approximately 5 acres of higher quality bat habitat would be cut per year.

**Arogos Skipper.** The arogos skipper is known to occur in the Training Impact Area. Restoration and maintenance of the OP59C LOS could help to encourage habitat development for this species.

**Barred Owl.** It is unknown if barred owls occur in the project area. Barred owls are highly mobile; therefore, it is assumed that barred owls would avoid robotic equipment. Additionally, avoiding tree clearing from March 31 through October 1 would help to avoid impacts on barred owl nests.

**Bald Eagle.** Bald eagles are not expected in the project area. The restoration and maintenance of LOS area would have no impact on bald eagles.

**No Action Alternative.** Under the No Action Alternative, JB MDL would continue to manage special status species inside of the Training Impact Area with methods currently used on the base. No impacts to wildlife are expected to result from the implementation of the No Action Alternative.

## 4.8 CULTURAL RESOURCES

**Alternative 1: OP 59C LOS Restoration (Preferred Alternative).** Restoration of the OP 59C LOS Restoration is of such limited nature and scope that there is little likelihood for any impacts to historic properties eligible for or listed on the NRHP. All vegetation management practices, and removal activities would be conducted in compliance with applicable federal, state, and local laws and regulations with JB MDL. The removal of vegetation is not anticipated to result in any adverse impacts to known cultural resources.

**No Action Alternative.** Under the No Action Alternative, the base would continue to manage the Training Impact Area as is, and would not introduce mechanical robotic

cutting. Therefore, with the implementation of No Action Alternative, there would be no impacts to historic properties eligible for or listed on the NRHP.

## 4.9 GEOLOGICAL RESOURCES

**Alternative 1: OP 59C LOS Restoration (Preferred Alternative).** Geology and Topography – The Preferred Alternative involves cutting down trees and requires no earth moving. No impacts to geology or topography are expected.

Soils – Minor, short-term soil disturbance and possible minor increases in soil erosion would be expected as a result of the Preferred Alternative. Soil would be more at risk to erosion as vegetative cover is lost. Additionally, movement of robotic heavy machinery during the initial clearing would cause soil erosion and compaction. When conducted in compliance with the INRMP and IWFMP, the impacts would be minimized. These disturbances would not be significant and would be temporary in nature.

**No Action Alternative.** Geology, Topography, and Soils – The No Action Alternative would not change the current management of the land, therefore having no impacts on geology, topography, or soils.

## 4.10 OTHER NEPA CONSIDERATIONS

### 4.10.1 Unavoidable Adverse Effects

This EA identifies any unavoidable adverse impacts that would be required to implement the Proposed Action and the significance of the potential impacts to resources and issues. Title 40 of the *Code of Federal Regulations* §1508. 27 specifies that a determination of significance requires consideration of context and intensity. Restoration of the OP 59C LOS would impact the local project area at JB MDL. The severity of potential impacts would be limited by regulatory compliance for the protection of the human and natural environment.

Unavoidable short-term adverse impacts associated with implementing the Proposed Action would include temporary erosion from soil disturbance and a temporary increase in air emissions. These effects are considered minor and would be confined to the OP 59C Training Impact Area, which is an active live fire training range. Unavoidable, long-term, negligible to minor adverse impacts would include approximately 279 acres of tree and shrub removal and the accompanied loss of carbon sequestration and loss of potential northern long-eared bat habitat. Use of environmental controls and best management practices (BMPs) would minimize potential impacts, as well as the acquired permits and approvals received from various resource agencies.

For the Proposed Action to be accomplished, these impacts would occur. The action is required to ensure safe operations in the Fort Dix training area in accordance Army mission and regulations. No other alternatives would provide a solution to meet the safety standards necessary that align with the missions of the installation.

### 4.10.2 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and enhancement of long-term productivity from implementation of the Proposed Action is evaluated from the standpoint of short-term effects and long-term effects. Short-term effects would be associated with vegetation removal. The long-term enhancement of productivity would be those effects

associated with operation and maintenance of the OP 59C after implementation of the proposed action.

The Proposed Action represents an enhancement of long-term productivity for training at JB MDL. The negative effects of short-term operational changes during vegetation removal would be minor compared to the positive benefits from removing the vegetation the OP 59C LOS area. Immediate and long-term benefits would be realized for operation and maintenance after completion of the Proposed Action.

#### **4.10.3 Irreversible and Irretrievable Commitments of Resources**

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action if implemented. An irreversible effect results from the use or destruction of resources (e. g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e. g., endangered species) that cannot be restored as a result of the Proposed Action. The short-term irreversible commitments of resources that would occur would include planning and engineering costs, building materials and supplies and their cost, use of energy resources during construction, labor, generation of fugitive dust emissions, and creation of temporary construction noise. No long-term irretrievable commitments of resources would result.

#### **4.11 CUMULATIVE EFFECTS**

This EA also considers the effects of cumulative impacts as required in 40 CFR 1508. 7 and concurrent actions as required in 40 CFR 1508. 25[1]. A cumulative impact, as defined by the CEQ (40 CFR 1508. 7) is an "...impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

One project that has the potential have cumulative effects with the proposed action is the Department of the Air Force (DAF) proposal to cut down trees that encroach into airfield flight surfaces and violate approach-departure and transitional surface criteria and pose a hazard to safe airfield operations (Unified Facilities Criteria 3-260-01 - Airfield and Heliport Planning and Design Standards). The JB MDL Installation Development Plan guides developments on the installation. The JB MDL Installation Development Plan (IDP) results from a comprehensive planning process that describes the installation's past, present, and future physical state, and serves as the guidance document for all future facility programming decisions. The Range Development Plan outlines a phased approach for the upgrade, modernization, and/or transformation of the Fort Dix training facility to meet the evolving needs of the Army. Due to the dangers associated with UXO, no development is proposed in the foreseeable future for the impact areas, including OP 59C LOS area. Maintenance and upkeep of firing ranges and associated infrastructure within the Training Impact Area would result in a negligible contribution to cumulative impacts, as described in the subsequent paragraphs for each resource area.

#### **Climate, Climate Change, and Greenhouse Gasses**

**Alternative 1 (Preferred Alternative).** The proposed restoration of OP59C LOS Area from would result in a negligible contribution of greenhouse gasses and climate change. The JB MDL Energy Saving Performance Contracts (ESPC); these are energy saving

initiatives that consist of a wide range scope of bringing a multitude of infrastructure to the base, to include lighting, solar panels, battery energy storage, HVAC, transformers, and a microgrid to add to the base's energy resiliency. For phase one, the 87th Civil Engineering Squadron constructed a solar energy system in 2022, to produce 21.9 megawatt-hours of renewable energy every year. Solar panels will be installed onto of buildings to reduce additional vegetation removal for the system. Estimates suggest the project will reduce CO<sub>2</sub> emissions by 15,000 metric tons, which is the equivalent of taking 3,000 cars off the road. For phase two, will involve replacing 308,000 lightbulbs with LED's in more than 400 buildings. The ESPC is the only project identified that would have potential cumulative effects with the proposed action (Andorka, 2016; JB MDL 2022). Overall, there would be a cumulative beneficial effect on greenhouse gasses.

**No Action Alternative.** No significant cumulative impacts on climate, climate change, or greenhouse gasses are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on these resources.

### **Air Quality**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts on air quality are expected to occur from restoration of the LOS area. Based on the size of the operation and duration, air emissions are expected to be below the de minimis threshold for a moderate ozone nonattainment area. The preferred alternative would result in the maintenance of existing regional air quality conditions of the nonattainment area for the 8-hour ozone NAAQS.

**No Action Alternative.** No significant cumulative impacts on air quality are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on air quality.

### **Water Resources**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to water resources are anticipated, as a result of the Proposed Action in conjunction with other activities. While the potential exists for temporary minor surface water impacts during vegetation removal, leaving a 25-ft buffer of trees around the streams will reduce the potential for impacts on water resources. Because of the short duration, minor water resources impacts are not expected to combine with other impacts to surface water quality on or around the installation. Additionally, JB MDL has several plans that aim to prevent degradation or damage to water resources on the installation, including the INRMP and the Spill Prevention Control and Countermeasures Plan (SPCCP). When projects on the installation are carried out in accordance with the INRMP and the other plans, cumulative impacts to water resources are expected to be less than significant.

**No Action Alternative.** No significant cumulative impacts on water resources are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on water resources.

### **Safety and Occupational Health**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to safety and occupational health are anticipated, as a result of the Proposed Action in conjunction with other activities. No individuals will be inside the Training Impact Area, which contains UXO, during vegetation clearing or maintenance. No adverse cumulative

impacts are anticipated to occur regarding human health and safety. Restoring the OP59C LOS area will improve safety of the troops that train in and around the OP59C.

**No Action Alternative.** Implementation of the No Action Alternative has the potential to result in cumulative effects on the Dix mission. If the vegetation continues to grow, it would result in further impairment of vision at OP 59C resulting in unsafe conditions at the Dix training range. Maintenance of the training range is imperative to the Dix mission. Currently, OP59C is needed to accommodate training time for indirect fire units. By reducing or eliminating a viable indirect fire training, multiple combat units would not be able to maintain proficiency due to unavailable training time. This will make units non-deployable or “mission-ineffective.”

### **Hazardous Materials and Wastes**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to hazardous materials and wastes are anticipated, as a result of the Proposed Action in conjunction with other activities. Hazardous waste programs provide guidance for waste identification, storage, transportation, disposal, landfill operations, and underground storage tanks. The installation SPCCP and Hazardous Materials Management Plan describe the procedures to be implemented in the event of a spill of hazardous materials or petroleum, oil, and lubricants. Due to the extensive policies and procedures in place to prevent and mitigate potential spills and mishandling of hazardous and toxic substances, it is expected that the Proposed Action will not result in a cumulative local or regional impact from the use of hazardous and toxic substances. When projects are carried out in accordance with these plans, cumulative impacts are expected to be less than significant.

**No Action Alternative.** No significant cumulative impacts on hazardous materials or wastes are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on hazardous materials and wastes.

### **Biological/Natural Resources**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to vegetation, wildlife, or special status species are anticipated, as a result of the Proposed Action in conjunction with other activities. Other projects proposed for JB MDL, the DAF proposal to cut down trees that encroach into airfield flight surfaces, are expected to produce minor impacts to biological resources. Minor cumulative effects on vegetation, trees and the species, such as bats would occur. However, but both projects are necessary to maintain the mission requirements at JBMDL. Projects on JB MDL require compliance with the JB MDL 2021 INRMP, as well as federal, state, and local regulations to prevent or minimize impacts to natural resources. Future development may decrease the amount of naturally occurring habitat both on and off the installation.

**No Action Alternative.** No significant cumulative impacts on biological resources are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on biological resources.

### **Cultural Resources**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to cultural resources are anticipated as a result of the Proposed Action in conjunction with other activities. The cultural resources located at JB MDL are located within installation boundaries, making them inaccessible to the public and therefor protected from the

public. The Installation Cultural Resources Management Plan (ICRMP) is reviewed and updated every five years and adjusted to reflect changes in operations and land usage. The ICRMP ensures that any natural resources management activities that will be conducted in accordance with applicable laws and regulations. Implementation of the Proposed Action when combined with past, present, and anticipated future projects, including those occurring outside the installation, would not be expected to result in any significant cumulative impacts to cultural resources.

**No Action Alternative.** No significant cumulative impacts on cultural resources are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on cultural resources.

### **Geological Resources**

**Alternative 1 (Preferred Alternative).** No significant cumulative impacts to geological resources are anticipated, as a result of the Proposed Action in conjunction with other activities at JB MDL. Projects proposed for JB MDL are expected to provide project-specific BMPs, including erosion control measures. These BMPs would help limit the amount of soil disturbance and erosion. Therefore, no significant cumulative impacts to the installation's topography, geology, and soils would be expected to occur. Implementation of the Proposed Action when combined with development outside JB MDL is not expected to result in cumulative impacts to regional topography, geology, or soils.

**No Action Alternative.** No significant cumulative impacts on geological resources are expected to occur from the No Action Alternative, as the No Action Alternative would have no impact on topography, geology, or soils.

**5.0 LIST OF PREPARERS**

This EA has been prepared under the direction of the Air Force Civil Engineer Center, USAF, and ITAM.

The individuals that contributed to the preparation of this EA are listed in Table 5-1.

**Table 5-1. List of Preparers**

<b>Name/Organization</b>	<b>Education</b>	<b>Resource Area</b>	<b>Years of Experience</b>
Ms. Mary Brandreth/U.S. Army Corps of Engineers, Philadelphia District	B.S. Marine Biology	NEPA, ESA	33
Mr. Conner Frey/U.S. Army Corps of Engineers, Philadelphia District	B.S. Biology	NEPA	2
Mr. Steve Long/U.S. Army Corps of Engineers, Philadelphia District	B.S. Engineering	Geographical Information Systems (GIS), Mapping	33
Ms. Nicole Minnichbach/U.S. Army Corps of Engineers, Philadelphia District	M.S. Anthropology	Cultural Resources	33
Ms. Hannah Reavy/U.S. Army Corps of Engineers, Philadelphia District	B.S. Geography and Environmental Planning	GIS, Mapping	2
Mr. Gregory Wacik/U.S. Army Corps of Engineers, Philadelphia District	B.S. Agricultural/Wildlife Sciences M.S. Aquatic Biology	NEPA	30
Ms. Valerie Whalon/U.S. Army Corps of Engineers, Philadelphia District	B.S. Marine Science M.S. Fisheries Science	NEPA, ESA	30

**6.0 PERSONS AND AGENCIES CONSULTED/COORDINATED**

Table 6-1 provides a list of persons and agencies contacted during the preparation of this EA.

**Table 6-1. Persons and Agencies Consulted/Coordinated**

Federal Agencies	
United States Fish and Wildlife Service New Jersey Field Office, Ecological Services 4 East Jimmie Leeds Road, Unit 4 Galloway, NJ 08205 Attn: Endangered Species Act Consultation < <a href="mailto:NJFO_ProjectReview@fws.gov">NJFO_ProjectReview@fws.gov</a> >	United States Environmental Protection Agency Region 2 Office Environmental Review Section 290 Broadway, 26 <sup>th</sup> Floor New York, NY 10007-1866 Attn: Chief of Environmental Review < <a href="mailto:Austin.Mark@epa.gov">Austin.Mark@epa.gov</a> >
United States Environmental Protection Agency Region 2 Office Federal Facilities Section 290 Broadway, 18 <sup>th</sup> Floor New York, NY 10007-1866 Attn: Chief of Federal Facilities < <a href="mailto:Pocze.Doug@epa.gov">Pocze.Doug@epa.gov</a> >	USDA - Natural Resources Conservation Service 220 Davidson Avenue, 4th Floor Somerset, NJ 08873-4115 Attn: Edwin Muniz, State Soil Scientist < <a href="mailto:edwin.muniz@nj.usda.gov">edwin.muniz@nj.usda.gov</a> >
State Agencies	
New Jersey Department of Environmental Protection Office of Permit Coordination and Environmental Review 401 East State Street Mail Code 401-07J PO Box 420 Trenton, NJ 08625 Attn: Megan Brunatti < <a href="mailto:Megan.Brunatti@dep.nj.gov">Megan.Brunatti@dep.nj.gov</a> >	New Jersey Department of Environmental Protection Historic Preservation Office PO Box 420 Trenton, NJ 08625-0420 Attn: Katherine Marcopul, Administrator < <a href="mailto:kate.marcopul@dep.nj.gov">kate.marcopul@dep.nj.gov</a> >
New Jersey Historical Commission 225 West State Street PO Box 305 Trenton, NJ 08625 Attn: Sara Cureton, Executive Director < <a href="mailto:sara.cureton@sos.nj.gov">sara.cureton@sos.nj.gov</a> >	New Jersey Division of Fish and Wildlife Endangered and Nongame Species Office Mail Code 501-03 PO Box 420 Trenton, NJ 08625-0420 Attn: Chief of the Endangered and Nongame Species Program, Endangered and Nongame Species Program Consultation < <a href="mailto:john.heilferty@dep.nj.gov">john.heilferty@dep.nj.gov</a> > cc: < <a href="mailto:robert.somes@dep.nj.gov">robert.somes@dep.nj.gov</a> >

DRAFT

Environmental Assessment

Restore and Maintain the Training Area 9F OP59C LOS Area  
Joint Base McGuire-Dix-Lakehurst

David Pepe New Jersey Department of Environmental Protection Office of Permitting and Project Navigation 401 East State Street Mail Code 401-07J PO Box 420 Trenton, NJ 08625 < <a href="mailto:David.Pepe@dep.nj.gov">David.Pepe@dep.nj.gov</a> >	Left Intentionally Blank
<b>Regional and Local Agencies</b>	
New Jersey Pinelands Commission PO Box 359 15 Springfield Road New Lisbon, NJ 08064 Attn: Susan Grogan, Executive Director < <a href="mailto:PDCBank@pinelands.nj.gov">PDCBank@pinelands.nj.gov</a> >	Ocean County Soil Conservation District 714 Lacey Rd Forked River, NJ 08731 Attn: Christine Raabe, CPM, District Director < <a href="mailto:craabe@soildistrict.org">craabe@soildistrict.org</a> >
Ocean County Department of Planning 129 Hooper Avenue PO BOX 2191 Toms River, NJ 08754-2191 Attn: Anthony Agliata, Planning Director c/o: <a href="mailto:MSundberg@co.ocean.nj.us">MSundberg@co.ocean.nj.us</a> , <a href="mailto:VTompkins@co.ocean.nj.us">VTompkins@co.ocean.nj.us</a>	Left Intentionally Blank
<b>Tribal Agencies</b>	
Ms. Carissa Speck Historic Preservation Director Delaware Nation PO Box 825 Anadarko, OK 73005 < <a href="mailto:cspeck@delawarenation-nsn.gov">cspeck@delawarenation-nsn.gov</a> >	Ms. Katelyn Lucas Tribal Historic Preservation Officer Delaware Nation Historic Preservation Office 2825 Fish Hatchery Road Allentown, PA 18103 < <a href="mailto:klucas@delawarenation-nsn.gov">klucas@delawarenation-nsn.gov</a> > < <a href="mailto:delawarenationsection106@gmail.com">delawarenationsection106@gmail.com</a> >
Ms. Susan Bachor Deputy THPO & Archaeologist Delaware Tribe Historic Preservation 126 University Circle Stroud Hall, Rm. 437 East Stroudsburg PA 1830 < <a href="mailto:sbachor@DelawareTribe.onmicrosoft.com">sbachor@DelawareTribe.onmicrosoft.com</a> >	Left Intentionally Blank

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DRAFT

Environmental Assessment

Restore and Maintain the Training Area 9F OP59C LOS Area  
Joint Base McGuire-Dix-Lakehurst

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Environmental Assessment

Restore and Maintain the Training Area 9F OP59C LOS Area  
Joint Base McGuire-Dix-Lakehurst

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# APPENDIX A

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Interagency/Intergovernmental Coordination  
and Public Participation





**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Mary Pat Robbie, Director  
Burlington County Department of Resource Conservation  
PO Box 6000  
Mount Holly, NJ 08060  
<[mprobbie@co.burlington.nj.us](mailto:mprobbie@co.burlington.nj.us)>

SUBJECT: Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Robbie,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

If you have information regarding potential impacts of the Proposed Action on the human environment, which includes the natural and physical environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

**BRUNSON.CA**  
**THERINE.E.10**  
**91059890**  
CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

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Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Joseph Brickley, Director of Public Works  
Burlington Department of Planning  
49 Rancocas Road  
P.O. Box 6000  
Mount Holly, NJ 08060  
<[jbrickley@co.burlington.nj.us](mailto:jbrickley@co.burlington.nj.us)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Mr. Brickley,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

If you have information regarding potential impacts of the Proposed Action on the human environment, which includes the natural and physical environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

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Date: 2023.01.24  
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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Robert Reitmeyer, District Manager  
Burlington County Soil Conservation District  
1971 Jacksonville-Jobstown Road  
Columbus, NJ 08022  
<[rreitmeyer@bscd.org](mailto:rreitmeyer@bscd.org)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Mr. Reitmeyer,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

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Sincerely

BRUNSON.CAT  
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Date: 2023.01.24  
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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Carl Champion  
Installation Tribal Liaison Officer  
Environmental Supervisor, 787th CES/CEIE  
Civil Engineering Squadron, Environmental Office  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Ms. Carissa Speck  
Historic Preservation Director  
Delaware Nation  
PO Box 825  
Anadarko, OK 73005  
<[cspeck@delawarenation-nsn.gov](mailto:cspeck@delawarenation-nsn.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Speck:

The purpose of this letter is to provide you with an opportunity to review and comment on a proposed action in which the Delaware Nation may have an interest and to invite the Tribe to participate in government-to-government consultation with Joint Base McGuire-Dix-Lakehurst (JB MDL).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The OP 59C LOS Area restoration occurs within the JB MDL Training Impact Area which is surrounded on three sides by the U-shaped Dix range area. The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

**LET'S GO!**

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

Pursuant to 54 United States Code § 306108 of the National Historic Preservation Act and in accordance with 36 Code of Federal Regulations Part 800 (Protection of Historic Properties), DAF would like to initiate government-to-government consultation to allow you or your designee the opportunity to identify any properties of religious and/or cultural significance that may be present in the area affected by this proposal. This information will be used to determine whether there are any cultural resources present that are eligible for listing in the National Register of Historic Places, and if so, whether the Proposed Action would cause adverse effects that must be addressed. Your feedback is important and a response within 30 days would enable us to ensure that your concerns are fully considered in our evaluation. Please be assured that, in accordance with confidentiality and disclosure stipulations in 54 United States Code § 307103 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties.

If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at carl.champion.1@us.af.mil. Thank you in advance for your participation.

Sincerely

CHAMPION.CARL  
.E.JR.1186038602<sup>2</sup>  
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Date: 2023.01.24 10:00:54 -05'00'

CARL CHAMPION  
Installation Tribal Liaison Officer

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Carl Champion  
Installation Tribal Liaison Officer  
Environmental Supervisor, 787th CES/CEIE  
Civil Engineering Squadron, Environmental Office  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Ms. Katelyn Lucas  
Historic Preservation Assistant  
Delaware Nation Historic Preservation Office  
2825 Fish Hatchery Road  
Allentown, PA 18103  
<[delawarenationsection106@gmail.com](mailto:delawarenationsection106@gmail.com)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Lucas:

The purpose of this letter is to provide you with an opportunity to review and comment on a proposed action in which the Delaware Nation may have an interest and to invite the tribe to participate in government-to-government consultation with Joint Base McGuire-Dix-Lakehurst (JB MDL).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The OP 59C LOS Area restoration occurs within the JB MDL Training Impact Area which is surrounded on three sides by the U-shaped Dix range area. The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

Pursuant to Section 106 of the National Historic Preservation Act and in accordance with 36 Code of Federal Regulations Part 800 (Protection of Historic Properties), DAF would like to initiate government-to-government consultation to allow you or your designee the opportunity to identify any properties of religious and/or cultural significance that may be present in the area affected by this proposal. This information will be used to determine whether there are any cultural resources present that are eligible for listing in the National Register of Historic Places, and if so, whether the Proposed Action would cause adverse effects that must be addressed. Your feedback is important and a response within 30 days would enable us to ensure that your concerns are fully considered in our evaluation. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties.

If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at carl.champion.1@us.af.mil. Thank you in advance for your participation.

Sincerely

CHAMPION.CARL  
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CARL CHAMPION  
Installation Tribal Liaison Officer

Attachment:  
Description of the Proposed Action and Alternatives

cc: Katelyn Lucas <klucas@delawarenation-nsn.gov>



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Carl Champion  
Installation Tribal Liaison Officer  
Environmental Supervisor, 787<sup>th</sup> CES/CEIE  
Civil Engineering Squadron, Environmental Office  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Ms. Susan Bachor  
Delaware Tribe Historic Preservation  
Pennsylvania Office  
PO Box 64  
Pocono Lake, PA 1834  
<[sbachor@DelawareTribe.onmicrosoft.com](mailto:sbachor@DelawareTribe.onmicrosoft.com)>

Dear Ms. Bachor:

The purpose of this letter is to provide you with an opportunity to review and comment on a proposed action in which the Delaware Tribe may have an interest and to invite the tribe to participate in government-to-government consultation with Joint Base McGuire-Dix-Lakehurst (JB MDL).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

Pursuant to Section 106 of the National Historic Preservation Act and in accordance with 36 Code of Federal Regulations Part 800 (Protection of Historic Properties), DAF would like to initiate government-to-government consultation to allow you or your designee the opportunity to identify any properties of religious and/or cultural significance that may be present in the area affected by this proposal. This information will be used to determine whether there are any cultural resources present that are eligible for listing in the National Register of Historic Places, and if so, whether the Proposed Action would cause adverse effects that must be addressed. Your feedback is important and a response within 30 days would enable us to ensure that your concerns are fully considered in our evaluation. Please be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties.

If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at [carl.champion.1@us.af.mil](mailto:carl.champion.1@us.af.mil). Thank you in advance for your participation.

Sincerely

CHAMPION.CARL.E.JR.1186038602<sup>2</sup>  
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Date: 2023.01.24 10:03:25 -05'00'

CARL CHAMPION  
Installation Tribal Liaison Officer

Attachment:  
Description of the Proposed Action and Alternatives

cc: <[sbachor@delawaretribe.org](mailto:sbachor@delawaretribe.org)>; <[lheady@delawaretribe.org](mailto:lheady@delawaretribe.org)>



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Carl Champion  
Installation Tribal Liaison Officer  
Environmental Supervisor, 787th CES/CEIE  
Civil Engineering Squadron, Environmental Office  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Mr. Larry Heady  
Tribal Historic Preservation Officer  
Delaware Tribe of Indians  
DTHPO Midwest Office, 1929 E. 6th Street  
Duluth, MN 55812  
<[lheady@delawaretribe.org](mailto:lheady@delawaretribe.org)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Mr. Heady:

The purpose of this letter is to provide you with an opportunity to review and comment on a proposed action in which the Delaware Tribe may have an interest and to invite the tribe to participate in government-to-government consultation with Joint Base McGuire-Dix-Lakehurst (JB MDL).

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at carl.champion.1@us.af.mil. Thank you in advance for your participation.

Sincerely

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CARL CHAMPION  
Installation Tribal Liaison Officer

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

United States Environmental Protection Agency  
Region 2 Office  
Federal Facilities Section  
290 Broadway, 18<sup>th</sup> Floor  
New York, NY 10007-1866  
<[Pocze.Doug@epa.gov](mailto:Pocze.Doug@epa.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Attn: Chief of Federal Facilities

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

BRUNSON.CA  
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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

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Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

United States Environmental Protection Agency  
Region 2 Office  
Environmental Review Section  
290 Broadway, 26<sup>th</sup> Floor  
New York, NY 10007-1866  
<[Austin.Mark@epa.gov](mailto:Austin.Mark@epa.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Attn: Chief of Environmental Review

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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Sincerely

BRUNSON.CAT  
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Date: 2023.01.24 11:02:30  
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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Dr. Sharon D. White  
Cultural Resources Manager  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Sara Cureton  
New Jersey Historical Commission  
225 West State Street  
PO Box 305  
Trenton, NJ 08625  
<[sara.cureton@sos.nj.gov](mailto:sara.cureton@sos.nj.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Cureton:

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The OP 59C LOS Area restoration occurs within the JB MDL Training Impact Area which is surrounded on three sides by the U-shaped Dix range area. The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

Pursuant to 54 United States Code § 306108 of the National Historic Preservation Act and in accordance with 36 Code of Federal Regulations Part 800 (Protection of Historic Properties), DAF would like to initiate consultation concerning the Proposed Action to allow you the opportunity to provide comments, concerns, and/or suggestions you might have. That information will be used to determine whether there are any cultural resources present that are eligible for listing in the National Register of Historic Places, and if so, whether the Proposed Action would cause adverse effects that must be addressed.

Your feedback is important and a response within 30 days of receipt of this letter would enable us to ensure that your concerns are fully considered in our evaluation. Thank you in advance for your participation. If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at [sharon.white.7@us.af.mil](mailto:sharon.white.7@us.af.mil).

Sincerely,

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Date: 2023.01.24 09:13:25  
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SHARON D. WHITE  
JB MDL, Cultural Resources Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Megan Brunatti  
New Jersey Department of Environmental Protection  
Office of Permit Coordination and Environmental Review  
401 East State Street  
Mail Code 401-07J  
PO Box 420  
Trenton, NJ 08625  
<[Megan.Brunatti@dep.nj.gov](mailto:Megan.Brunatti@dep.nj.gov)>

Dear Ms. Brunatti,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

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If you have information regarding potential impacts of the Proposed Action on the human environment, which includes the natural and physical environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

BRUNSON.CA  
THERINE.E.10  
91059890  
CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

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Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

John Heilferty, Chief  
New Jersey Division of Fish and Wildlife  
Endangered and Nongame Species Office  
Mail Code 501-03  
PO Box 420  
Trenton, NJ 08625-0420  
<[john.heilferty@dep.nj.gov](mailto:john.heilferty@dep.nj.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Mr. Heilferty,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

The purpose of the action is to allow safe and continued use of OP 59C LOS area for artillery live fire training. The objective is to restore and maintain the function of the Training Area 9F OP 59C Line of Sight Area. The project is needed to restore the LOS at OP 59C where vegetation has blocked target observation by Forward Observers during live-fire gunnery events. The obscured targets create an unsafe environment and places soldiers and/or property at risk. The attached Description of the Proposed Action and Alternatives provides additional details on the Proposed Action.

If you have information regarding potential impacts of the Proposed Action on the human environment, which includes the natural and physical environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

BRUNSON.CA  
THERINE.E.10  
91059890

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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives

cc: <[robert.somes@dep.nj.gov](mailto:robert.somes@dep.nj.gov)>



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Susan Grogan, Executive Director  
New Jersey Pinelands Commission  
PO Box 359  
15 Springfield Road  
New Lisbon, NJ 08064  
<[PDCBank@pinelands.nj.gov](mailto:PDCBank@pinelands.nj.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Grogan,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

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If you have information regarding potential impacts of the Proposed Action on the human environment, which includes the natural and physical environment or other environmental aspects of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA compliance process. We look forward to and welcome your participation in this process. Please respond within 30 days of receipt of this letter to ensure your concerns are adequately addressed in the EA.

Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Dr. Sharon D. White  
Cultural Resources Manager  
2404 Vandenberg Avenue  
Joint Base MDL, NJ 08641

17 January 2023

Dr. Katherine Marcopul  
New Jersey Department of Environmental Protection  
Historic Preservation Office  
PO Box 420  
Trenton, NJ 08625-0420  
<[kate.marcopul@dep.nj.gov](mailto:kate.marcopul@dep.nj.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Ms. Marcopul:

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and Department of the Air Force (DAF) NEPA regulations, DAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

The OP 59C LOS Area restoration occurs within the JB MDL Training Impact Area which is surrounded on three sides by the U-shaped Dix range area. The designated LOS area requires 437 acres of vegetation clearing for safe and continued operation. Due to the size and scope of the proposed action, the project will be conducted in four phases over a period of four fiscal years (FY) based on availability of funding. The LOS Project will include vegetation clearing of 110 acres for the first three phases and removal of 107 acres in the final phase of the project. Vegetation clearing would likely be conducted using robotic mechanical control methods to effectively remove trees and other vegetation visually obstructing targets in an area where unexploded ordnance (UXO) occurs.

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Your feedback is important and a response within 30 days of receipt of this letter would enable us to ensure that your concerns are fully considered in our evaluation. Thank you in advance for your participation. If we can provide any assistance or additional information that would aid in your review, please feel free to contact me at [sharon.white.7@us.af.mil](mailto:sharon.white.7@us.af.mil).

Sincerely,

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SHARON D. WHITE  
JB MDL, Cultural Resources Manager

Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

Edwin Muniz, State Soil Scientist  
USDA - Natural Resources Conservation Service  
220 Davidson Avenue, 4th Floor  
Somerset, NJ 08873-4115  
<[edwin.muniz@nj.usda.gov](mailto:edwin.muniz@nj.usda.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Dear Mr. Muniz,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

**BRUNSON.CA**  
**THERINE.E.10**  
**91059890**  
CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

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Attachment:  
Description of the Proposed Action and Alternatives



**DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS AIR MOBILITY COMMAND  
JOINT BASE MCGUIRE-DIX-LAKEHURST**

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

17 January 2023

United States Fish and Wildlife Service  
New Jersey Field Office, Ecological Services  
4 East Jimmie Leeds Road, Unit 4  
Galloway, NJ 08205  
<[NJFO\\_ProjectReview@fws.gov](mailto:NJFO_ProjectReview@fws.gov)>

**SUBJECT:** Vegetation Removal from Training Area 9F Observation Point 59C Line of Sight Area, Joint Base McGuire-Dix-Lakehurst, Burlington County, New Jersey

Attn: Endangered Species Consultation Project Reviewer

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, and the U.S. Air Force (USAF) NEPA regulations, USAF and Army Support Activity (ASA) Integrated Training Area Management (ITAM) are preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with removing vegetation to restore the function of Training Area 9F Observation Point 59C (OP 59C) Line of Sight (LOS) area in the Dix area of Joint Base McGuire-Dix-Lakehurst.

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Please send your written responses to the JB MDL NEPA/Environmental Impact Analysis Process (EIAP) Project Manager, Ms. Catherine Brunson, 787 CES/CEIEA, via email at [catherine.brunson@us.af.mil](mailto:catherine.brunson@us.af.mil). Thank you in advance for your participation.

Sincerely

BRUNSON.CA  
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91059890

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CATHERINE BRUNSON, USAF  
JB MDL, NEPA/EIAP Project Manager

Attachment:  
Description of the Proposed Action and Alternatives



# State of New Jersey

## DEPARTMENT OF ENVIRONMENTAL PROTECTION

### FISH AND WILDLIFE

#### OFFICE OF THE ASSISTANT COMMISSIONER

DAVID M. GOLDEN

501 East State Street

P.O. Box 420, Mail Code 501-03

Trenton, New Jersey 08625-0420

Tel. (609) 292-9410 • Fax (609) 984-1414

[www.njfishandwildlife.com](http://www.njfishandwildlife.com)

**PHILIP D. MURPHY**

*Governor*

**SHEILA Y. OLIVER**

*Lt. Governor*

**SHAWN M. LATOURETTE**

*Commissioner*

January 25, 2023

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

Dear Ms. Brunson,

The Endangered and Nongame Species Program does not have any specific concerns with the overall project. We recognize the need to maintain the range area and understand that it is within the already heavily altered impact area. The range area does host a wide variety of valuable natural resources and rare and endangered wildlife species. This project could potentially be highly beneficial to some of the rarer wildlife species found on the Joint Base McGuire-Dix-Lakehurst. The wildlife resources found within the base and range area include a variety of native snakes (timber rattlesnake, eastern pinesnake and corn snakes), birds (common nighthawk, eastern meadowlark), bats (red, hoary, and big brown) and insects (arogos skipper, Georgia satyr).

To avoid impacts to these natural resources, it is recommended that tree clearing occur between November 1st and March 30th and optimally during December through February. During these times you can avoid potential negative impacts to nesting birds, breeding bats, and active snakes. To maintain the habitat following the initial cutting to 18", prescribed fire management might be an optimal tool to minimize equipment usage and maximize the creation of suitable wildlife habitat by restoring natural disturbance processes. The prescribed fire return interval will need to be determined by the vegetation response following the cutting and any other fire events. However, a 5 to 10 year return interval is usually very effective and can be more frequent if necessary. Also, Bald Eagles have nested within the impact area in the past and it is recommended to be observant of any large raptor nests that might be found in the area.

JB DML is home to one of the last remaining and stable populations for the Arogos Skipper in the Eastern United States. This species depends on open, disturbed savannahs and grasslands and the reedgrass savannahs of the impact area are optimal habitat for this species. Creating and maintain habitat as proposed in this plan will be highly beneficial to this species as well as a variety of other rare insect species that depend on these habitats. If any areas are to be reseeded, it is highly recommended to utilize a suitable, native pollinator seed mix. This will be beneficial to a variety of wildlife.

If you require any further input or information from our program, please feel free to reach out.

Sincerely,

Robert Somes  
Senior Zoologist  
Endangered and Nongame Species Program

Cc:  
John Heilferty  
David Golden





PHILIP D. MURPHY  
Governor  
SHEILA Y. OLIVER  
Lt. Governor

State of New Jersey  
THE PINELANDS COMMISSION  
PO Box 359  
NEW LISBON, NJ 08064  
(609) 894 7300  
www.nj.gov/pinelands



LAURA E. MATOS  
Chair  
SUSAN R. GROGAN  
Acting Executive Director

General Information: [Info@pinelands.nj.gov](mailto:Info@pinelands.nj.gov)  
Application Specific Information: [AppInfo@pinelands.nj.gov](mailto:AppInfo@pinelands.nj.gov)

January 26, 2023

Catherine Brunson (via email)  
Department of the Air Force  
787 CES/CEIEA  
2404 Vandenberg Avenue  
Joint Base McGuire-Dix-Lakehurst NJ 08641

Re: Application # 1991-0820.127  
Block 92, Lot 1  
Plumsted Township

Dear Ms. Brunson:

We have reviewed your January 25, 2023 letter regarding an Environmental Assessment for the removal of vegetation from Training Area 9F at Joint Base McGuire-Dix-Lakehurst.

The Pinelands Comprehensive Management Plan (CMP) contains many land use and environmental standards. For example, the land use standards of the CMP require that, where feasible, development at military installations be located in that portion of the installation located within the Pinelands Protection Area and avoid the Pinelands Preservation Area District and Forest Area. Examples of CMP environmental standards include a prohibition on most development in wetlands and a required buffer to wetlands, the protection of threatened and endangered plants and animals, and stormwater management.

To discuss how these standards may relate to the proposed development, you may wish schedule a pre-application conference with our staff. During this conference, we can discuss the proposed development and advise of the specific standards of the CMP that appear to be of concern. There is no fee required for a pre-application conference.

Please feel free to contact me if you have any questions.

Sincerely,

Ernest M. Deman, CPM  
Supervising Environmental Specialist



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Office of Permitting and Project Navigation  
401 East State Street, Mail Code 401-07J, P.O. Box 420  
Trenton, New Jersey 08625-0420  
Phone: (609) 292-3600 Fax: (609) 292-1921  
[www.nj.gov/dep/pcer](http://www.nj.gov/dep/pcer)

PHILIP D. MURPHY  
*Governor*

SHEILA Y. OLIVER  
*Lt. Governor*

SHAWN M. LaTOURETTE  
*Commissioner*

February 23, 2023

Ms. Catherine Brunson  
NEPA/EIAP Project Manager  
787 CES/CEIEA  
2404 Vandenberg Ave.  
Joint Base McGuire-Dix-Lakehurst, NJ 08641

**RE: NJDEP Comments on the NEPA Description of Proposed Action and Alternatives  
Environmental Assessment  
Restore and Maintain the Line of Sight for Training Area 9F, Observation Point 59C  
Joint Base McGuire-Dix-Lakehurst, New Jersey**

Dear Ms. Brunson,

The New Jersey Department of Environmental Protection's (Department) Office of Permitting and Project Navigation (OPPN) has distributed, for review and comment, the National Environmental Policy Act (NEPA) required Description of Proposed Action and Alternatives Environmental Assessment (EA) to Restore and Maintain the Line of Sight for Training Area 9F, Observation Point 59C (OP 59C LOS). This project is proposed to take place within the Dix area of the Joint Base McGuire-Dix-Lakehurst in Plumsted Township, Ocean County. The proposed work area covers 437 acres of the designated Line of Sight. The proposed work consists of vegetation clearing over a period of four fiscal years, likely through the use of robotic mechanical control methods; after initial clearing, maintenance will be performed to keep vegetation at a maximum height of 18 inches indefinitely. The objective of the proposed work is to restore the function of the OP 59C LOS area, which allows the safe use of artillery live fire training.

Based on the information provided and the representations made within the EA, the Department offers the following comments for your consideration:

### **Land Resource Protection**

#### **Freshwater Wetlands**

The NJDEP Division of Land Resource Protection (Division) recommends that the Base Commander corresponds with NJ Pinelands (Commission) regarding Freshwater Wetlands jurisdiction; if the Commission does not regulate the proposed 437 acre clearing project, then the Division shall take the lead on freshwater wetland jurisdictional activities.

If NJDEP is the lead agency, all impacts to freshwater wetlands which create a "discharge of fill" (stump and root removal) as a result of the proposed activities will require the appropriate freshwater wetland permit(s).

If wetland permits are required for an identified discharge of fill, then a Freshwater Wetland Individual Permit (IP) would be most applicable. This permit would require an extensive alternative analysis and an

alternative site review which avoids impacting freshwater wetlands habitats. The Division requests that use of herbicides be avoided to reduce other possible adverse impacts.

Additionally, if NJDEP is the lead agency, all impacts to freshwater wetland transition areas are not regulated by the Division under N.J.A.C. 7:7A-2.5.

If you have any questions regarding this information, please contact Brett Kosowski at [Brett.Kosowski@dep.nj.gov](mailto:Brett.Kosowski@dep.nj.gov).

#### Flood Hazard Areas

The proposed activity must address the potential change in land cover and the effect it will have with respect to stormwater management. Specifically, runoff quantity, quality, and groundwater recharge.

The proposed activity does not include any aboveground construction; therefore, the Division has no flood hazard area concerns, and no permit will be required.

If you have any questions regarding this information, please contact Andre Thompson at [Andre.Thompson@dep.nj.gov](mailto:Andre.Thompson@dep.nj.gov).

#### Coastal Permitting

The project area is located outside of CAFRA, Waterfront Development, or Coastal Wetlands jurisdiction. Therefore, no coastal permits would be required for the project.

If you have any questions regarding this information, please contact Lindsey Davis at [Lindsey.Davis@dep.nj.gov](mailto:Lindsey.Davis@dep.nj.gov).

#### New Jersey Fish and Wildlife

New Jersey Fish and Wildlife (NJFW) understands JBMDL's primary mission and relies on the Integrated Natural Resources Management Plan (INRMP) to protect resources under the purview of NJFW. Species Occurrence Area (v13) and Landscape mapping (v3.3) indicates habitats valued for Threatened/Endangered (T/E) and "Species of Concern" within the expected area of impact (Timber Rattlesnake, Corn Snake, Northern Pine Snake, Barred Owl, Arogos Skipper, Silver-bordered Fritillary, "Great Blue Heron, Georgia Satyr").

Consideration should be given to quipping robotic mechanical vegetation removers (platforms) with low impact treads to minimize impact to snakes. NJFW would also recommend that robotic mechanical vegetation removers avoid any in-water disturbance between April 1 and June 30 to minimize impacts to fisheries spawning activities.

In section 2.4.1, the EA indicates that "the OP 59C LOS area would take a total of approximately 100 days over the 4 phases" or 25 days per phase. Consideration should be given to cutting/clearing while animals have migrated out of the area or while hibernating. NJFW recommends that any tree/brush clearing/trimming be done outside the nesting season (March 1 to August 31), to minimize impact to nesting migratory birds/raptors.

Northern Long-eared Bat, Little Brown Bat, Eastern Small-footed Myotis, and Tri-colored Bat, all of which are found state-wide and have a "Consensus Status" of "Endangered" in NJ, should be considered when tree clearing is part of any project. To protect summer roosting habitat for bats, NJFW recommends a general timing restriction on trimming or removal of trees from April 1 to September 30.

The comments and recommendations of the NJFW's Office of Environmental Review (OER) are subject to change, if any additional environmental issues or concerns that may negatively affect resources under the purview of the NJFW are discovered during pre-construction surveys or the construction phase. The OER should be contacted upon discovery at (609) 960-4502 or (609) 292-9451.

If you have any questions, please contact Kelly Davis of the Division of Fish & Wildlife at (908) 236-2118 or at [Kelly.Davis@dep.nj.gov](mailto:Kelly.Davis@dep.nj.gov)

### **Historic Preservation**

The proposed project requires consultation with the Historic Preservation Office (HPO), pursuant to Section 106 of the National Historic Preservation Act, for the identification, evaluation, and treatment of historic properties within the project's area of potential effects. As a result, the HPO looks forward to further consultation with the United States Department of the Army, Corps of Engineers, and the United States Air Force, pursuant to their obligations under Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR §800.

In addition, if future project activities require any Freshwater Wetlands permits, Waterfront Development permits, and/or Upland Development permits issued by the State of New Jersey's Division of Land Resource Protection, Highland Preservation Area Approval Permits, as well as environmental assessments under Executive Order 215, further consultation with the HPO will be necessary and archaeological and architectural survey may be appropriate.

If you have any questions regarding this information, please contact Meghan Baratta at [Meghan.Baratta@dep.nj.gov](mailto:Meghan.Baratta@dep.nj.gov).

### **NJPDES Stormwater**

If more than one acre will be disturbed, a general permit for Construction Activities, (5G3) may be required. The permit application process is available online at <http://www.state.nj.us/dep/DWQ/5G3.htm>.

If you have any questions regarding this information, please contact Eleanor Krukowski at (609) 633-9286 or at [Eleanor.Krukowski@dep.nj.gov](mailto:Eleanor.Krukowski@dep.nj.gov).

### **Air Permitting**

The applicant should review the requirements of N.J.A.C. 7:27-8.2(c) 1-21 for stationary permitting requirements. This includes but is not limited to, construction equipment-stationary construction equipment or emergency generators, may require air pollution permits if it is located on the site for longer than one year N.J.A.C. 7:27-8.2(d)15. There are general permits for boilers and emergency generators (<https://www.state.nj.us/dep/aqpp/gp.html>) if the units can meet the prescribed requirement in the general permits.

Title V may apply to the proposed project; if so, the air permit regulation at N.J.A.C. 7:27-22 would cover the proposal.

Idling Vehicles- any vehicles involved on the project must adhere to the idling standards (less than 3 minutes) in N.J.A.C. 7:27-14 and 15.

Air pollution including odors that are detectable offsite that are injurious to human health or would result in citizen complaints are prohibited. N.J.A.C. 7:27-5.2.

Fugitive Dust - dust emissions either windblown or generated from construction activities should be controlled to prevent offsite impacts or material tracked onto the roadways. N.J.A.C. 7:27-5.2.

If you have any questions regarding this information, please contact Danny Wong at [Danny.Wong@dep.nj.gov](mailto:Danny.Wong@dep.nj.gov).

**Remediation Management**

If any spills are discovered at the site as the project work progresses, please report the spill to the Department by calling the WARN-DEP hotline number at 1-877-WARN-DEP (1-877-927-6337)

If you have any questions regarding this information, please contact A.J. Joshi at [Ashish.Joshi@dep.nj.gov](mailto:Ashish.Joshi@dep.nj.gov).

Thank you for giving the Department the opportunity to comment on the EA for the proposed project. Please contact Ryan Carter at [Ryan.Carter@dep.nj.gov](mailto:Ryan.Carter@dep.nj.gov) or at (609) 984-5337, or contact OPPN at (609) 292-3600 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to be 'D. Pepe', with a horizontal line extending to the right.

---

David Pepe, Director  
Office of Permitting and Project Navigation



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# APPENDIX B

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Executive Order 11988  
Floodplain Management



## **Executive Order 11988**

Executive Order (EO) 11988 requires that federal agencies avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities."

The Water Resources Council Floodplain Management Guidelines for implementation of EO 11988, as referenced in U.S. Army Corps of Engineers (USACE) ER 1165-2-26, require an eight-step process that agencies should carry out as part of their decision-making on projects that have potential impacts to be, or are within the floodplain. The eight steps and project-specific responses to them are summarized below.

***1. Determine if a proposed action is in the base floodplain (that area which has a one percent or greater chance of flooding in any given year).***

The Proposed Action occurs outside of the 0.2% annual exceedance floodplain (500-year floodplain) (Flood Emergency Management Act [FEMA] Maps 34029C0255F, 34029C01040F as shown below).

***2. If the action is in the base floodplain, identify and evaluate practicable alternatives to the action or to location of the action in the base floodplain.***

Not applicable.

***3. If the action must be in the floodplain, advise the general public in the affected area and obtain their views and comments.***

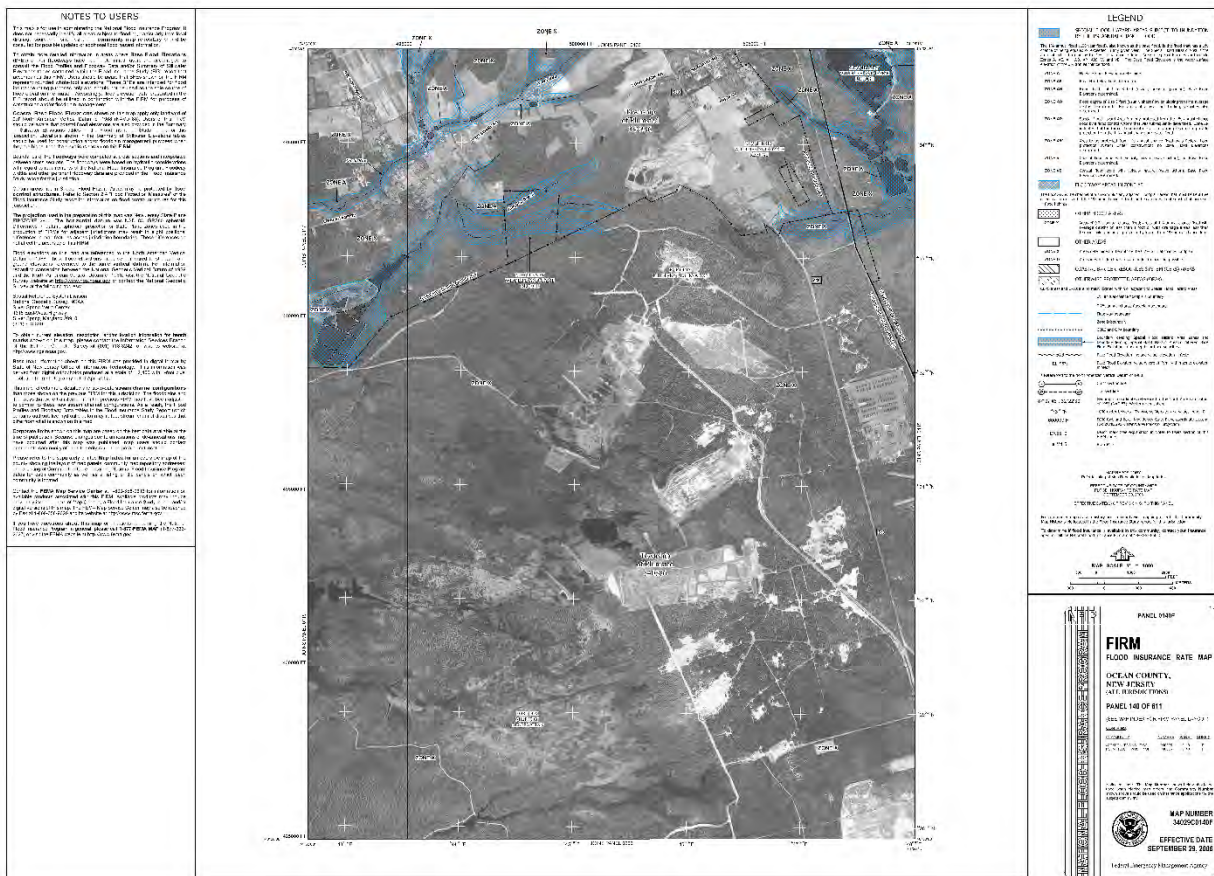
Not applicable.

***4. Identify beneficial and adverse impacts due to the action and any expected losses of natural and beneficial floodplain values. Where actions proposed to be located outside the base floodplain will affect the base floodplain, impacts resulting from these actions should also be identified.***

Not applicable.

***5. If the action is likely to induce development in the base floodplain, determine if a practicable non-floodplain alternative for the development exists.***

The action is in an active Army training range and would not induce development in a floodplain.



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In order to access the Website, you must agree to these Terms and Conditions. By using the Website, you agree to these Terms and Conditions. If you do not agree to these Terms and Conditions, you should not use the Website. These Terms and Conditions may be updated from time to time without notice. It is your responsibility to check the Website for any updates to these Terms and Conditions. If you continue to use the Website after these Terms and Conditions have been updated, you agree to the updated Terms and Conditions. If you do not agree to the updated Terms and Conditions, you should stop using the Website.

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For more information, please contact [Company Name] at [Contact Information].

1. Introduction  
2. Definitions  
3. User Registration  
4. User Responsibilities  
5. Website Content  
6. Intellectual Property  
7. Privacy Policy  
8. Disclaimers  
9. Limitation of Liability  
10. Governing Law  
11. Miscellaneous  
12. Contact Information

1. Introduction  
The purpose of these Terms and Conditions is to define the relationship between the Website and its users. These Terms and Conditions apply to all users of the Website, whether or not they are registered users. The Website is provided on an "as is" basis, without any warranty, express or implied. The Website is not intended to be used for any purpose other than personal, non-commercial use. The Website is not to be used for any purpose that is illegal, fraudulent, or otherwise in violation of applicable law. The Website is not to be used to harass, threaten, or otherwise harm any individual or entity. The Website is not to be used to disseminate any information that is defamatory, obscene, or otherwise in violation of applicable law. The Website is not to be used to engage in any activity that is prohibited by applicable law. The Website is not to be used to engage in any activity that is prohibited by applicable law.

2. Definitions  
The following definitions apply to these Terms and Conditions:  
"Website" means the website located at [Website URL].  
"User" means any individual who accesses the Website.  
"Registered User" means a user who has completed the registration process.  
"Unregistered User" means a user who has not completed the registration process.  
"Content" means any text, graphics, images, or other information displayed on the Website.  
"Intellectual Property" means any copyright, trademark, or other intellectual property rights.  
"Privacy Policy" means the policy regarding the collection, use, and disclosure of personal information.  
"Disclaimers" means statements that limit the liability of the Website.  
"Limitation of Liability" means the limitation on the damages that can be recovered from the Website.  
"Governing Law" means the law that applies to the Website.  
"Miscellaneous" means other terms and conditions that are not covered by the other sections.

3. User Registration  
In order to access the Website, you must register as a user. The registration process is described in the "User Registration" section of the Website. You must provide accurate and complete information during the registration process. If you provide false or incomplete information, your registration may be terminated. You must agree to these Terms and Conditions during the registration process. If you do not agree to these Terms and Conditions, you should not register as a user.

4. User Responsibilities  
As a user of the Website, you are responsible for your actions and the content that you post on the Website. You must not engage in any activity that is prohibited by applicable law. You must not harass, threaten, or otherwise harm any individual or entity. You must not disseminate any information that is defamatory, obscene, or otherwise in violation of applicable law. You must not engage in any activity that is prohibited by applicable law. You must not engage in any activity that is prohibited by applicable law.

5. Website Content  
The Website contains content that is provided by third parties. The Website is not responsible for the content of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

6. Intellectual Property  
The Website contains intellectual property that is owned by third parties. The Website is not responsible for the intellectual property of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

7. Privacy Policy  
The Website has a privacy policy that describes how personal information is collected, used, and disclosed. The privacy policy is located at [Privacy Policy URL]. You should read the privacy policy before you use the Website. If you do not agree to the privacy policy, you should not use the Website. The Website is not responsible for the privacy policy of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

8. Disclaimers  
The Website contains disclaimers that limit the liability of the Website. The disclaimers are located at [Disclaimers URL]. You should read the disclaimers before you use the Website. If you do not agree to the disclaimers, you should not use the Website. The Website is not responsible for the disclaimers of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

9. Limitation of Liability  
The Website limits its liability for damages, losses, or injuries that result from the use of the Website. The limitation of liability is located at [Limitation of Liability URL]. You should read the limitation of liability before you use the Website. If you do not agree to the limitation of liability, you should not use the Website. The Website is not responsible for the limitation of liability of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

10. Governing Law  
The Website is governed by the law of the state of [State]. The governing law is located at [Governing Law URL]. You should read the governing law before you use the Website. If you do not agree to the governing law, you should not use the Website. The Website is not responsible for the governing law of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

11. Miscellaneous  
These Terms and Conditions contain miscellaneous terms and conditions that are not covered by the other sections. The miscellaneous terms and conditions are located at [Miscellaneous URL]. You should read the miscellaneous terms and conditions before you use the Website. If you do not agree to the miscellaneous terms and conditions, you should not use the Website. The Website is not responsible for the miscellaneous terms and conditions of third parties. The Website is not responsible for any damages that result from the use of the Website. The Website is not responsible for any losses that result from the use of the Website. The Website is not responsible for any injuries that result from the use of the Website. The Website is not responsible for any deaths that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website. The Website is not responsible for any damages, losses, or injuries that result from the use of the Website.

12. Contact Information  
For more information, please contact [Company Name] at [Contact Information].

[illegible][illegible]



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# APPENDIX C

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Climate and Air Quality



Dix

Background

**Installation Name:** Joint Base McGuire-Dix-Lakehurst

**Report Date:** 29 January 2024

**Data Version:** 2.3

**Location:** New Jersey

**Area:** 30990 acres

**Department:** Air Force

**Service:** AF

**Component:** AF Active

**NCA4 Region:** Northeast



Historical Extreme Weather and Climate Change Exposure

Historical Extreme Weather Event Occurrence

The following table shows whether this site experienced any of the listed extreme events during their respective base periods (see the indicator fact sheets under the “Resources” tab for more details).

Event Type	Has Occurred
Tropical Cyclone Frequency	X
Tornado Frequency	X
Ice Storms Occurrence	X
Tropical Cyclone Destructive Winds	X
Tropical Cyclone Maximum Average Precipitation	X
Ice Jam Occurrence	X

## Damaging Extreme Weather and Wildfire Events, 2000-2021

This shows the damage sustained in the county or counties (for Alaska, NOAA forecast zone) in which Dix is located. The first table shows the total damage by event type since 2000. The second table shows the largest fifteen events across all types recorded at this location since 2000. The data for these tables come from the NOAA Storm Events Database (<https://www.ncdc.noaa.gov/stormevents/>).

Many NWS storm event types (<https://www.nws.noaa.gov/directives/sym/pd01016005curr.pdf>) are broadly similar in impact, but differ along a continuum of magnitudes or geographies (marine vs. land, for instance). In order to provide a readily accessible assessment of damages by type of damage, some NWS storm event type categories are combined for presentation in the Installation Report. More information about the event types represented by the categories below, and event types that were excluded from this analysis, can be found in *Documentation of and Justification for Collapsing NOAA Storm Event Categories* located in the "Resources" tab of this tool.

### Damages from Extreme Weather and Wildfire, 2000-2021

Administrative Unit(s): Burlington,NJ; Ocean,NJ

Type	# of Events	Property Damage Estimate	Direct Deaths
Riverine and Lakeshore Flooding	138	\$123,111,020.00	0
Wind Damage	304	\$15,648,750.00	6
Heavy Rain	63	\$1,500,000.00	0
Tornadoes and Waterspouts	15	\$1,375,000.00	1
Wildfire	10	\$700,000.00	0
Hail	83	\$7,000.00	0
Snowstorms	22	\$0.00	0
Cold Temperature Extremes	4	\$0.00	0
Hurricanes, Typhoons and Tropical Storms	2	\$0.00	0
Heat and Heat Waves	4	\$0.00	2
Drought	11	\$0.00	0
Coastal Flood	1	\$0.00	0

### Top Property Damaging Storm Events, 2000-2021

Administrative Unit(s): Burlington,NJ; Ocean,NJ

Rank	Date	Type	Property Damage Estimate	Direct Deaths
1	08/28/2011	Riverine and Lakeshore Flooding	\$60,000,000.00	0
2	07/12/2004	Riverine and Lakeshore Flooding	\$50,000,000.00	0
3	06/23/2015	Wind Damage	\$10,535,000.00	0
4	04/15/2007	Riverine and Lakeshore Flooding	\$9,000,000.00	0
5	04/02/2005	Riverine and Lakeshore Flooding	\$2,000,000.00	0
6	09/23/2003	Wind Damage	\$1,500,000.00	0
7	02/22/2003	Heavy Rain	\$1,500,000.00	0
8	07/28/2014	Wind Damage	\$1,000,000.00	0
9	07/29/2007	Wind Damage	\$750,000.00	0
10	09/15/2006	Riverine and Lakeshore Flooding	\$750,000.00	0
11	06/02/2002	Wildfire	\$700,000.00	0
12	09/23/2003	Tornadoes and Waterspouts	\$600,000.00	0
13	05/01/2014	Riverine and Lakeshore Flooding	\$500,000.00	0
14	04/30/2014	Riverine and Lakeshore Flooding	\$500,000.00	0
15	07/31/2009	Wind Damage	\$500,000.00	0

## Dominant Climate Change Hazards

This section explores the dominant climate hazards that Dix is likely to be exposed to in the future, compared to its exposure based on the modeled historical baseline (1950-2005) data. To bracket the range of potential future conditions, the data are presented for two climate epochs (a 30-year average centered on 2050 [2035-2064] and another centered on 2085 [2070-2099]). For each epoch, information for two future scenarios\* is provided: a Higher emissions scenario that assumes minimal greenhouse gas mitigation and, therefore, higher rates of warming and a Lower emissions scenario that assumes more aggressive greenhouse gas mitigation and, therefore, lower rates of warming.

\* The Higher scenario corresponds to Representative Concentration Pathway (RCP) 8.5, and the Lower scenario corresponds to RCP4.5. Both of these RCPs are used in climate modeling studies.

### Ranked Climate Exposure Hazards for the Higher Scenario (and the hazard's greatest contributing indicator)

Rank	2050-Higher	2085-Higher
1	Drought (Mean Annual Runoff)	Drought (Mean Annual Runoff)
2	Energy Demand (5-Day Maximum Temperature)	Riverine Flooding (Riverine Flood Extent)
3	Riverine Flooding (Extreme Precipitation Days)	Energy Demand (5-Day Maximum Temperature)
4	Wildfire (Fuel Abundance)	Wildfire (Flash Drought Frequency)
5	Extreme Temperature (5-Day Maximum Temperature)	Extreme Temperature (5-Day Maximum Temperature)
6	Land Degradation (Aridity)	Land Degradation (Aridity)
7	Historical Extreme Conditions (Tropical Cyclone Maximum Average Precipitation)	Historical Extreme Conditions (Tropical Cyclone Maximum Average Precipitation)

## Heat Exposure Hazard

Changing temperatures are the driving force behind all climate change hazards, both directly (through factors such as excess morbidity and mortality) and indirectly (through changes to drought, wildfire, flooding, coastal inundation, and other hazards).

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
402	5-Day Maximum Temperature (°F)	93	98	100	100	104
401	Days Above 95°F (days/year)	3	18	24	24	53
405	High Heat Index Days* (days/year)	21	58	66	67	94

\* The Wet Bulb Globe Temperature cannot be calculated with the data available from climate models, so the National Weather Service Heat Index is provided as an estimate of the combined effects of heat and humidity on people working and exercising outdoors.

# Threatened and Endangered Species

## DoD Observed Threatened and Endangered Species on Dix

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The following table lists the Threatened and Endangered Species (TES) observed on this site from the DoD's TES list.

## Endangered Species Report

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Observed Threatened and Endangered Species (TES) data from the DoD TES list is not currently available for this site and may be provided in a future release.

## Additional Resources

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The Climate Mapping for Resilience and Adaptation (CMRA) tool is an interactive application that provides statistics, maps, and reports that can help people document their climate exposure, now and in the future. (<https://resilience.climate.gov/>)

The FEMA Flood Map Service Center (MSC) is the official public source for flood hazard information produced in support of the National Flood Insurance Program (NFIP). Use the MSC to find your official flood map, access a range of other flood hazard products, and take advantage of tools for better understanding flood risk. (<https://msc.fema.gov/portal/home>)

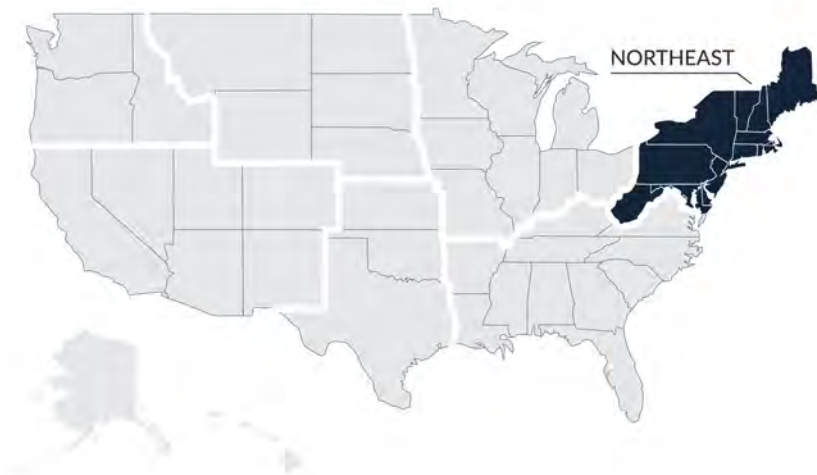
The National Flood Hazard Layer (NFHL) is a geospatial database that contains current effective flood hazard data. FEMA provides the flood hazard data to support the National Flood Insurance Program. (<https://www.fema.gov/flood-maps/national-flood-hazard-layer>)

The National Hydrography Dataset (NHD) represents the water drainage network of the United States with features such as rivers, streams, canals, lakes, ponds, coastlines, dams, and streamgages. The NHD is the most up-to-date and comprehensive hydrography dataset for the Nation. (<https://www.usgs.gov/national-hydrography/national-hydrography-dataset>)

## Climate Change Exposure Overview

This section provides an overview of the key climate change concerns of the region in which Dix is located.

### UNITED STATES



## NOAA State Climate Summaries

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<https://statesummaries.ncics.org/>

## Regional Exposure

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[Northeast Summary](#)

## Global Exposure

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[Global Climate Summary](#)

Estimated NOX and VOX emissions calculator

Project: JBMDL OP59C LOS Clearing  
Number of Acres to be Cleared: 279  
Years for Clearing: 5  
Acres/Year: 56  
Acres/Day: 1.50 based on the assumption that most trees are 20 inches in diameter or less  
Number of Days of Clearing/Year: 37.2

								NOx	NOx	VOC	VOC	PM 2.5	PM 2.5	SOx	SOx	CO	CO	CO2	CO2	CH4	CH4	N2O	N2O
Equipment	# of Engines	HP	Load Factor (LF)	Days of Operation	Hrs/Day	Total Hours	hp-hr	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)	EF (g/hp-hr)	Emissions (tons)
<b>Equipment</b> <b>Bold is Equipment List:</b> Non-bold is the representative equipment used for EF and LF																							
<b>Land equipment</b>																							
Ford F-350 : TRUCK, HIGHWAY, CONVENTIONAL, 8,600 LBS ( 3,901KG)GVW, 4X2, 2 AXLE, 3/4 TON -PICKUP	1	430	0.59	37.2	8	297.60	75,501	10.33	0.86	0.54	0.04	0.16	0.01	0.005	0.000	1.21	0.10	536	44.61	0.034	0.00	0.015	0.00
Ford F-250: TRUCK, HIGHWAY, CONVENTIONAL, 8,600 LBS ( 3,901KG)GVW, 4X2, 2 AXLE, 3/4 TON -PICKUP	1	430	0.59	37.2	8	297.60	75,501	10.33	0.86	0.54	0.04	0.16	0.01	0.005	0.000	1.21	0.10	536	44.61	0.034	0.00	0.015	0.00
2KW Honda Generator	1	3.1	0.43	37.2	8	297.60	397	9.50	0.00	0.19	0.00	0.16	0.00	0.005	0.000	1.21	0.00	536	0.23	0.034	0.00	0.015	0.00
Hydraulic Excavator Crawler (feller buncher or excavator with with mulching head to be used for cutting only)	2	250	0.59	37.2	8	595.20	87,792	9.50	0.92	0.19	0.02	0.16	0.02	0.005	0.000	1.21	0.12	536	51.87	0.034	0.00	0.015	0.00
<b>TOTAL EMISSIONS/YEAR (tons)</b>									<b>2.64</b>		<b>0.11</b>		<b>0.02</b>		<b>0.00</b>		<b>0.12</b>		<b>52.10</b>		<b>0.00</b>		<b>0.00</b>
(Ocean County; Metropolitan Philadelphia Interstate Air Quality Control Region)																							
<b>CLEAN AIR ACT GENERAL CONFORMITY RULE LIMIT (THRESHOLD TONS/YEAR)</b>									<b>100.00</b>		<b>50.00</b>	10.2770089											

Emissions Factors Obtained from:  
South Shore of Staten Island (SSSI) Feasibility Study/EIS (for Excavator and generator LF and EF) [https://www.nan.usace.army.mil/Portals/37/docs/civilworks/projects/ny/coast/StatenIsland/SOUTH%20SHORE%20STAT%20UPDATE/12\\_AppenVib\\_Final%20EIS%20AppenD\\_J.pdf?ver=2017-03-13-091245-373](https://www.nan.usace.army.mil/Portals/37/docs/civilworks/projects/ny/coast/StatenIsland/SOUTH%20SHORE%20STAT%20UPDATE/12_AppenVib_Final%20EIS%20AppenD_J.pdf?ver=2017-03-13-091245-373)  
Salem River Dredging Equipment Emission Estimates (for truck LF and EFs)  
Ford Data (for truck HP)  
CMI Data (for mulcher HP)  
Honda data (for generator HP)