DRAFT ENVIRONMENTAL ASSESSMENT
2020 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

PREPARED BY:

Joint Base McGuire-Dix-Lakehurst, New Jersey

Letters or other written comments provided may be published in the EA. As required by law, substantive comments will be addressed in the 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 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 Personal home addresses and phone numbers will not be published in the EA.

February 2023

COVER SHEET

Responsible Agencies:
Department of the Air Force (DAF), Air Mobility Command, 87th Air Base Wing

Affected Location:
Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey

Report Designation:
Environmental Assessment

Proposed Action:
Implementation of the 2020 Integrated Natural Resource Management Plan (INRMP) at Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey.

Abstract: The 2020 Integrated Natural Resource Management Plan was written as a guide to manage JB MDL's natural resources consistent with mission requirements. Specifically, implementation of the updated INRMP is needed for (1) compliance with environmental laws and regulations; (2) implementation of guidelines and policies for on-site natural resource management; (3) application of best available data and adaptive management; (4) management of the Bird/Wildlife Aircraft Strike Hazard (BASH) risk; and (5) sustainment of military operation and training missions.

This environmental assessment (EA) was prepared to evaluate the impacts of implementing the updated 2020 INRMP. The EA analyzes three alternatives including the No-Action Alternative as required by the Council on Environmental Quality's (CEQ) regulations and was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the provisions of Code of Federal Regulations (CFR) Title 323, Part 989, and 40 CFR Parts 1500 through 1508, which include CEQ's NEPA implementing regulations.

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ACRONYMS AND ABBREVIATIONS

AFCEC	Air Force Civil Engineer Center
AFI	Air Force Instructions
AFMAN	Air Force Manual
AMW	Air Mobility Wing
APE	Area of Potential Effect
AR	Army Regulation
ASA	Army Support Activity
BASH	Bird/Wildlife Aircraft Strike Hazard
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
BOMARC	Boeing Michigan Aeronautical Research Center
CAA	Clean Air Act
CATM	Combat Arms Training and Maintenance Facility
CEIE	Civil, Environmental, and Infrastructure Engineering
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental, Response, Compensation, and Liability Act
CES	Civil Engineer Squadron
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CH4	methane
CMP	Comprehensive Management Plan
CO	Carbon Monoxide
CO2	Carbon Dioxide
CWA	Clean Water Act
DBH	Diameter at Breast Height
DOPAA	Description of Proposed Action and Alternatives
DoD	Department of Defense
DPCC	Discharge Prevention, Containment, Countermeasures and Discharge Cleanup Removal
EA	Environmental Assessment
ECOS	Environmental Conservation Online System
EIAP	Environmental Impact Analysis Process

EIS	Environmental Impact Statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FPPA	Farmland Protection Policy Act
FONSI	Finding of No Significant Impact
FWPA	Freshwater Wetlands Protection Act
GHG	greenhouse gases
GIS	Geographic Information Services
HC	hydrocarbon
ICP	Integrated Contingency Plan
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
ITLO	Installation Tribal Liaison Officer
JB MDL	Joint Base McGuire-Dix-Lakehurst
MBTA	Migratory Bird Treaty Act
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
msl	mean sea level
N2	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NEPA	National Environmental Policy Act
NHP	Natural Heritage Program
NHPA	National Historic Preservation Act
NJDEP	New Jersey Department of Environmental Protection
NJHPO	New Jersey Historic Preservation Office

NJPC	New Jersey Pinelands Commission
NLEB	Northern Long-Eared Bat
NRHP	National Register of Historic Places
NOA	Notice of Availability
NO2	Nitrogen Dioxide
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NRM	Natural Resources Manager
NSR	New Source Review
NPL	National Priority List
OPPN	NJDEP Office of Permitting and Navigation
OSHA	Occupational Safety and Health Administration
PIT	Passive Integrated Transponder
PL	Pinelands Waters
PM	Particulate Matter
POC	Point of Contact
PPA	Pinelands Protection Act
PPE	Personal Protective Equipment
PSD	Prevention of Significant Deterioration
PW	Pinelands Waters
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SAIA	Sikes Act Improvement Act
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Officer
SO2	Sulfur Dioxide
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered
TCB	Tri-colored bat
THPO	Tribal Historic Preservation Officer
tpy	tons per year
USACE	U.S. Army Corps of Engineers

USAF	U.S. Air Force
USAR	U.S. Army Reserve
USEPA	U.S. Environmental Protection Agency
U.S.C.	United States Code
USDA	United States Department of Agriculture
USDA-WS	United States Department of Agriculture-Wildlife Services
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compounds
UXO	unexploded ordnance
WHA	Wildlife Hazard Assessment
WMA	Watershed Management Area

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1.0 PURPOSE OF AND NEED FOR ACTION

This environmental assessment (EA) is being prepared to evaluate the impacts of implementing the updated 2020 Integrated Natural Resources Management Plan (INRMP) at Joint Base McGuire-Dix-Lakehurst (JB MDL), located in Burlington and Ocean Counties, New Jersey. In compliance with federal, state, and local standards, the updated INRMP recommends various natural resource management practices designed to mitigate, minimize, or avoid negative impacts to the local ecosystem and enhance the positive effects of the JB MDL mission. The INRMP was written as a guide to manage JB MDL's natural resources consistent with its mission requirement "to provide mission-ready Warfighters to support 1Unified Combatant Commanders in global military operations and unrivaled installation management for America's only tri-service joint base" (JB MDL, 2019).

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; the provisions of Code of Federal Regulations (CFR) Title 323, Part 989; and 40 CFR Parts 1500 through 1508, which are the Council on Environmental Quality's (CEQ's) NEPA implementing regulations.

1.1 Introduction

The former McGuire Air Force Base, Army Support Activity Fort Dix, and the Naval Air Engineering Station at Lakehurst were merged in 2009 to create JB MDL, which comprises approximately 42,000 acres of U.S. Department of Defense (DoD)-controlled land in south central New Jersey (**Figure 1**). The 3,562-acre McGuire Area is in Burlington and Ocean Counties east of Wrightstown Borough, 18 miles southeast of downtown Trenton, New Jersey. The McGuire Area is bordered on the east, south, and west by the Dix Area; the north side borders Wrightstown-Cookstown Road. The 31,003-acre Dix Area is located 20 miles southeast of Trenton in Burlington and Ocean Counties and is bordered in part by the McGuire Area to the north and Lakehurst to the east. Lakehurst encompasses approximately 7,430 acres and is situated entirely within Ocean County, 35 miles southeast of Trenton. There are several thousand acres of state forest, wildlife management areas, and federally managed land surrounding JB MDL, including: Manchester State Wildlife Management Area, south of Lakehurst; Colliers Mills State Wildlife Management Area, east of McGuire and north of Lakehurst; Whiting State Wildlife Management Area; Brendan T. Byrne State Forest, south of the Dix Area; and the surrounding New Jersey Pinelands National Reserve (JB MDL, 2019).

The Sikes Act Improvement Act of 1997 (SAIA), as amended through 2010 (16 United States Code [U.S.C.] 670a et seq.), governs the planning and implementation of conservation programs on military installations and requires the Secretaries of the Military Departments to prepare INRMPs in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the applicable state wildlife agency. The SAIA requires the plans to reflect "mutual agreement of the parties concerning the conservation, protection, and management of fish and wildlife resources." The SAIA and Air Force Manual (AFMAN) 32-7003, Environmental Conservation, 20 April 2020, requires INRMPs to be reviewed for operation and effect not less than every five years. Annual reviews and updates to INRMPs may also be initiated by the base Natural Resources Manager (NRM) and/or an Installation Support Team Natural Resources Media Manager as changes to natural resource management and conservation practices occur. Installations conduct reviews of the INRMP in coordination with internal stakeholders and local representatives to accomplish pertinent updates.

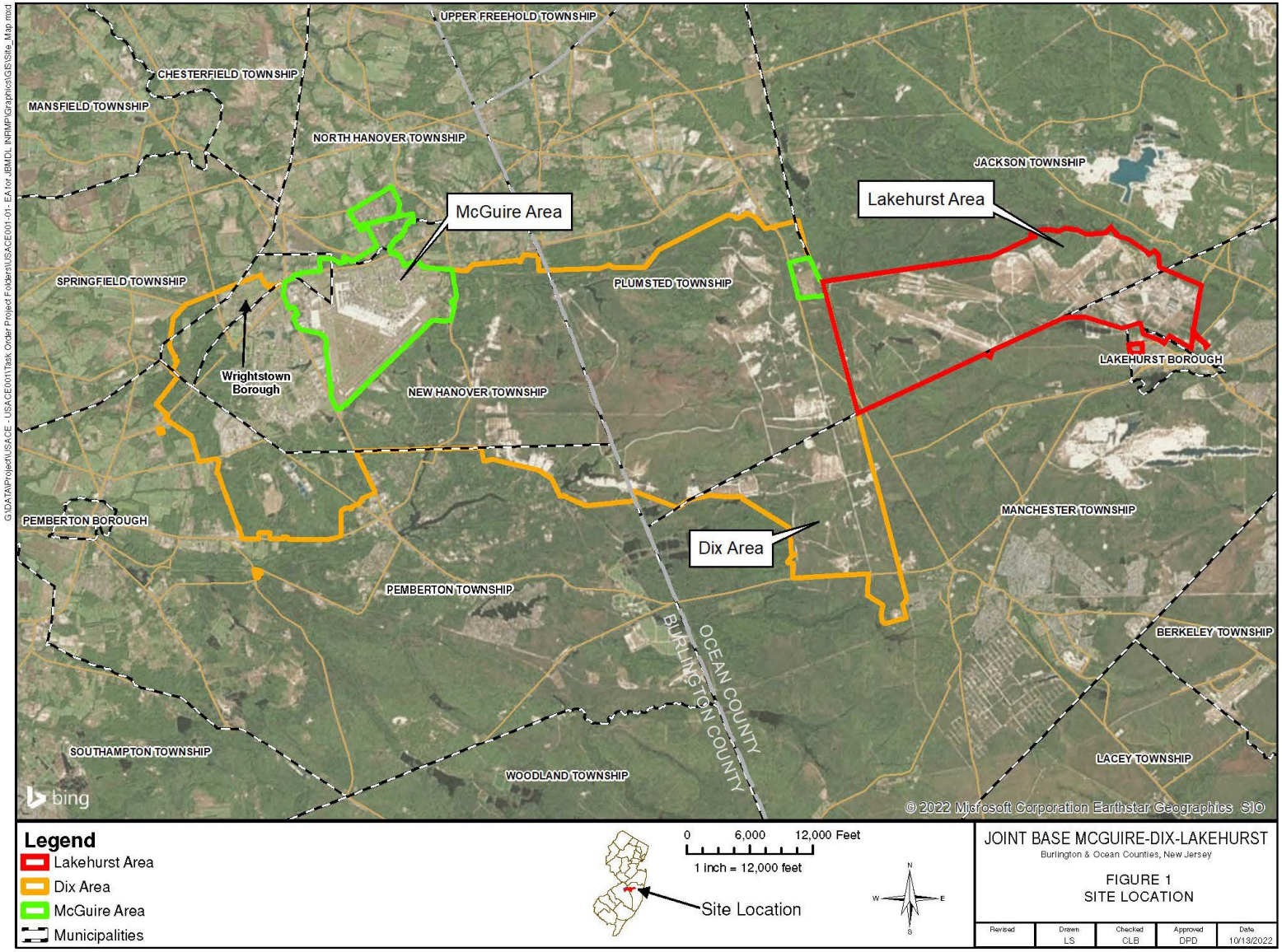

Figure 1: Project Site, Joint Base McGuire-Dix-Lakehurst

1.2 Purpose of the Action

The purpose of the Proposed Action is to implement the updated 2020 JB MDL INRMP to manage on-site natural resource projects that further support sustained biodiversity and environmental quality while ensuring safe and successful on-base military missions.

The updated 2020 INRMP was prepared in cooperation with the USFWS and New Jersey Department of Environmental Protection (NJDEP); United States Department of Agriculture-Wildlife Services (USDA-WS); Natural Resources Conservation Service (NRCS); U.S. Army Corps of Engineers (USACE); Air Force Civil Engineer Center (AFCEC); and the 787 Civil Engineer Squadron/Civil, Environmental, and Infrastructure Engineering (CES/CEIE) Natural Resources Department. The JB MDL NRM regularly communicates with these groups and agencies on a project-by-project basis throughout the year. The goal of these communications is to promote conservation initiatives throughout the installation and encourage input from state and federal partners. The updated INRMP reflects the mutual agreement of all parties concerning conservation, protection, and management of natural resources on JB MDL in compliance with the SAIA.

1.3 Need for the Proposed Action

Implementation of the updated INRMP is needed for (1) compliance with environmental laws and regulations; (2) implementation of guidelines and policies for on-site natural resource management; (3) application of best available data and adaptive management; (4) management of the Bird/Wildlife Aircraft Strike Hazard (BASH) risk; and (5) sustainment of military operation and training missions.

Implementation of the INRMP will enable compliance with the SAIA. According to the SAIA, the purpose of a military conservation program is conservation and rehabilitation of natural resources; sustainable multipurpose use of those resources; and public access to military lands, subject to safety requirements and military security. Moreover, the conservation program must be consistent with the mission-essential use of the installation and its lands and cause no net loss of military land use. Both the INRMP and the natural resources program that it supports must meet the guidance and regulations provided in DoD Instruction 4715.03 (Environmental Conservation Program, 14 February 2011) and AFMAN 32-7003 (Integrated Natural Resources Management). Collectively, these guidance documents require a plan and management approach consistent with mission support; multipurpose use; integration-, ecosystem-, or landscape-level management; and environmental compliance and stewardship. The Proposed Action would meet the underlying need to conduct mission activities in a realistic setting while maintaining compliance with environmental regulations and policies.

The previous version of the JB MDL INRMP, signed September 2015, described projects planned for years 2015–2019. Since that time, annual reviews were conducted to identify new management measures and projects to be developed and incorporated into the five-year INRMP revision. Implementation of the 2020 INRMP (the Proposed Action) involves executing natural resource management measures presented in the Goals and Objectives section of the updated INRMP. These measures consist of new and previously established ongoing projects that align with current ecological trends, species statuses, species occurrences, and knowledge gained during the past five years.

1.4 Decisions to be Made

This EA provides JB MDL with documentation of environmental impacts associated with implementing the Proposed Action. The decision to be made is the selection of an alternative for

the JB MDL Installation Commander to implement the Proposed Action. The decision options are:

- continuing current activities outlined in the previous INRMP (the No Action Alternative),
- selecting an alternative to implement the Proposed Action and preparing a Finding of No Significant Impact (FONSI), or
- preparing an Environmental Impact Statement if the selected alternative would result in significant environmental impacts.

1.5 Intergovernmental Coordination / Consultations

The Intergovernmental Coordination Act and Executive Order (EO) 12372, "Intergovernmental Review of Federal Programs," requires federal agencies to cooperate with and consider state and local views in implementing a federal proposal. AFI 32-7060, Interagency and Intergovernmental Coordination for Environmental Planning,25 March 1994, (IICEP), requires the U.S. Air Force (USAF) to implement an agency coordination process, which is used to facilitate and receive agency input coordination and implement scoping requirements.

1.5.1 Interagency and Intergovernmental Coordination and Consultations

Implementing NEPA regulations requires coordination with relevant federal, state, and local agencies to evaluate the potential environmental impacts of implementing the Proposed Action or its alternatives. The notification process offers these relevant agencies and groups the opportunity to provide comments on the Proposed Action and potential impacts that may occur. In compliance with NEPA, JB MDL distributed to project stakeholders a draft Description of Proposed Action and Alternatives (DOPAA) to implement the 2020 INRMP. The following entities/agencies responded: Manchester Township, Ocean County Planning Board, NJDEP Office of Permitting and Project Navigation (OPPN), the Pinelands Commission, the Pinelands Preservation Alliance, the USFWS New Jersey Field Office, and the New Jersey Historic Preservation Office (NJHPO). The list of agencies to which the DOPAA/notice of intent to prepare an Environmental Assessment was distributed is provided in Appendix A, followed by copies of the response letters received.

1.5.2 Government to Government Consultations

The National Historic Preservation Act (NHPA) (54 United States Code [USC] §§ 306101-306131) requires federal agencies to consult with Native American tribal governments to identify cultural resources that may be adversely affected by the agency's proposed action. Consistent with the NHPA, Department of Defense (DoD) Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes, September 24, 2018,* and DAF Instruction 90-2002, *Interactions with Federally Recognized Tribes*, *August 24, 2020,* federally recognized tribes that are historically affiliated with the JB MDL geographic region are invited to consult on all proposed undertakings that potentially affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation with federal, state, and local governments or the intergovernmental coordination process, and it requires separate consultation with 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 (DoD 4710.02, Section 3.4[a]). The Installation Commander has designated the JB MDL Installation Environmental Element Chief (787 CES/CEIE) as the Installation Tribal Liaison Officer (ITLO) in accordance with Department of the Air Force Instruction 90-2002, 24 August 2020, Interactions with Federally Recognized Tribes. The ITLO serves as the POC for the Tribal Historic Preservation Officer (THPO). 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 the tribe has an interest in. However, the Delaware Nation and Delaware Tribe of Indians expressed interest in government-to-government consultation with JB MDL.

1.6 Public and Agency Review of EA

The NEPA process is designed to inform the public of the potential environmental consequences of a Proposed Action and involve them in the federal decision-making process. Formal notification and opportunities for public participation will be incorporated into the EA process.

A Notice of Availability (NOA) of the EA and Draft FONSI will be published in the newspapers of record which include the *Burlington County Times* and *Asbury Park Press.* The NOA will invite the public to review and comment on the EA during the public and agency review period lasting 30 days.

Paper copies of the EA and draft FONSI will be available for review at the following libraries:

Pemberton Branch Library Burlington County 16 Broadway Browns Mills, NJ 08015	Burlington County Library Main Branch 5 Pioneer Boulevard Westhampton, NJ 08060	Manchester Library Branch Ocean County 21 S. Colonial Dr. Manchester, NJ 08759

Interested parties will also be able to review and provide comments on the 2020 INRMP, EA and FONSI documents by accessing them on the JB MDL Public Affairs website at: https://www.jbmdl.jb.mil/Home/Public-Affairs/.

Written comments should be directed to: Catherine Brunson, Environmental Office NEPA, 2404 Vandenberg Avenue, JB MDL, NJ 08641, or catherine.brunson@us.af.mil.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and the alternatives considered for implementation, including the No Action Alternative. It also provides a summary of alternatives that were subject to initial screening but were eliminated after further consideration. Consistent with the intent of NEPA, the screening process focused on identifying reasonable, resource-specific management alternatives and development of a plan that could be implemented for the foreseeable future. The outcome of the screening analysis led to the development of the Proposed Action, as described in the following paragraphs.

The NEPA process evaluates potential environmental consequences associated with the Proposed Action and considers alternative courses of action. Alternatives must satisfy the purpose of and need for the Proposed Action, which are defined in Sections 1.2 and 1.3 of this document. The CEQ regulations specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations.

2.1 Proposed Action

The Proposed Action is to implement the natural resource management measures at JB MDL consistent with the updated INRMP. These measures provide for the conservation and rehabilitation of on-site natural resources in a manner consistent with the military mission, integrate and coordinate natural resource management activities, provide for sustainable multipurpose uses of natural resources, and allow for public access and use of natural resources subject to safety and military security considerations.

The natural resource management measures outlined in the updated INRMP consist of goals and supporting objectives to manage such resources while supporting the military mission. Goals express a vision for a desired condition for the installation's resources and are the primary focal points for INRMP implementation (USAF, 2021). Objectives indicate a management initiative or strategy to achieve a desired and specific long- or medium-range condition and are supported by projects. Projects are specific actions that are conducted on a continual basis or can be accomplished within a single year.

The natural resource management goals outlined in the updated INRMP and listed below involve the integration of forestry management, fish and wildlife management, land management, and management for outdoor recreational opportunities, as practicable and consistent with the military mission and established land uses.

2.1.1 Fish and Wildlife Management

Goal 8.1.1: Manage Fish and Wildlife Based on an Ecosystem-Management Approach.
Goal 8.1.2: Improve Species Diversity.
Goal 8.1.3: Comply with All Game and Fish Laws.
Goal 8.1.4: Maintain Partnerships with Agencies and Groups Involved in Fish and Wildlife Management.

2.1.2 Outdoor Recreation Management

Goal 8.2.1: Provide Quality Outdoor Recreation Experiences.

2.1.3 Threatened and Endangered (T&E) Species Management Goals and Objectives

Goal 8.3.1: Manage Sensitive Species – Manage and Protect Sensitive Species and Associated Habitats While Protecting Operational Functionality of the Installation's Missions.

2.1.4 Water Resources

Goal 8.4.1: Comply with The JB MDL Stormwater Pollution Prevention Plan (SWPPP) – Remain in Compliance with the JB MDL SWPPP.

2.1.5 Wetland Management

Goal 8.5.1: Comply with EO 11990 – Remain in Compliance with EO 11990, Clean Water Act (CWA), USACE and State of New Jersey Wetland Regulations.
Goal 8.5.2: Protect Wetlands.

2.1.6 Grounds Maintenance and Land Management

Goal 8.6.1: Improve Effectiveness of Grounds Maintenance to the Overall Ecosystem.
Goal 8.6.2: Control Noxious and Invasive Plant Species in the Installation Environment.

2.1.7 Forest Management

Goal 8.7.1: Manage Urban Forest – Continue Development and Management of Trees on Base, in accordance with the Urban Street Tree Survey.
Goal 8.7.2: Use Mechanical Thinning in Overstocked Forest Stands in Poor Condition to Increase Forest and Tree Health, Habitat Value and to Decrease Wildfire Threats.

2.1.8 Wildland Fire Management

Goal 8.8.1: Use Prescribed Fire to Manage Grasslands, Airfields, and Woodlands.

2.1.9 Integrated Pest Management

Goal 8.9.1: Minimize Pest Species.

2.1.10 BASH Management

Goal 8.10.1: Minimize Aircraft Exposure to Potential Wildlife Strike Hazards Through Wildlife and Habitat Management.

2.1.11 Cultural Resource Management

Goal 8.11.1: Protect the Hanover Furnace Area to Prevent Loss of Important Cultural Resources.

2.1.12 Public Outreach

Goal 8.12.1: Promote Natural Resource Education and Awareness.

2.1.13 Geographic Information System (GIS) Management

Goal 8.13.1: Enhance, Update, and Maintain GIS Data.
Goal 8.13.2: Use GIS Information to Develop Goals and Objectives.

Table 2:1 provides specific objectives to attain the above goals as well as a listing of supporting projects/actions proposed for implementation under each alternative. A summary of potential impacts on environmental and socioeconomic resources resulting from implementation of each alternative is included in the INRMP Implementation Table.

The projects in the updated 2020 INRMP include both newly proposed initiatives as well as ongoing initiatives carried over from the previous five-year INRMP. New initiatives were developed in response to issues and management concerns obtained from cooperating

agencies, the military mission, and other interested stakeholders in an effort to contribute to the objectives and goals for JB MDL natural resource management. These objectives and goals are consistent with DoD and USAF guidance for multipurpose use, ecosystem-, and landscape-level management and support of the military mission.

The Proposed Action focuses on a five-year implementation period. This period will become effective upon the finalization of the INRMP and shall continue in full force for a period of five years. Additional environmental analysis may be required as new management strategies are developed during annual reviews of the INRMP and over the long term (that is, beyond five years). The INRMP will be reviewed and updated annually and will be revised and updated, as necessary, at the end of the five-year implementation period.

Table 2:1. INRMP Implementation Table

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.1.1.1 Monitor Snake Population						
8.1.1.1.1	Continue Pine Snake Survey at Dix	Ongoing	X	X	X	None, data collection only
8.1.1.1.2	Place Survey Boards for Timber Rattlesnake	Ongoing	X	X	X	None, data collection only
Objective 8.1.1.2 Monitor Bird Population						
8.1.1.2.1	Grassland Bird Surveys	Ongoing	X	X	X	None, data collection only
Objective 8.1.1.3 Monitor Bat Population						
8.1.1.3.1	Continue Bat Surveys	Ongoing	X	X	X	None, data collection only
Objective 8.1.1.4 Manage Deer Population						
8.1.1.4.1	Annual Hunting and Fishing Programs	Ongoing	X	X	X	No impact, continuation of existing practice
Objective 8.1.1.5 Manage Existing Grasslands						
8.1.1.5.1	Overseed Five Percent of Grasslands	Ongoing	X			None, beneficial impacts expected
8.1.1.5.2	Annual Mowing Lakehurst and Dix	New	X			Potential adverse impacts addressed in this EA
Objective 8.1.2.1 Improve and Maintain Species Diversity						
8.1.2.1.1	Noxious and Invasive Control	Ongoing	X		X	No impact, continuation of existing practice
8.1.2.1.2	Remove Litter and Debris at Laurel Pond	Ongoing	X		X	None, beneficial impacts expected
8.1.2.1.3	Install and Repair Interpretive Signs	Ongoing	X			No impact
Objective 8.1.2.2 Manage Wildlife Nesting Structures						
8.1.2.2.1	Install New Nest Boxes	Ongoing	X		X	None, beneficial impacts expected
8.1.2.2.2	Clean Nesting Structures	Ongoing	X		X	None, beneficial impacts expected

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.1.3.1 Continued Compliance with Federal and State Laws						
8.1.3.1.1	Annual Consultation with State Biologists Regarding Deer Season and Bag Limits	Ongoing	X	X	X	None, administrative action only
8.1.3.2.1	Enforce State Regulations	Ongoing	X	X	X	None, administrative action only
Objective 8.1.4.1 Maintain Agency Coordination						
8.1.4.1.1	Communication with Agencies and Non-Profit Organizations	Ongoing	X	X	X	None, administrative action only
8.1.4.1.2	Continuing Wildlife Research	Ongoing	X	X	X	None, data collection only
Objective 8.2.1.1 Provide Quality Outdoor Recreation						
8.2.1.1.1	Provide and Plant Native Vegetation Along Trails and Ponds	Ongoing	X			None, beneficial impacts expected
8.2.1.1.2	Replace Five Fishing Docks	New	X			None, beneficial impacts expected
Objective 8.3.1.1 Manage Base Grasslands for T&E Species						
8.3.1.1.1	Reseeding the McGuire Inner Triangle	Ongoing	X		X	No impact, continuation of existing practice
8.3.1.1.2	McGuire Inner Triangle Bird Surveys	Ongoing	X	X	X	None, data collection only
8.3.1.1.3	Review and Evaluate T&E Species Lists	Ongoing	X	X	X	None, data collection only
8.3.1.1.4	Bog Turtle Survey	Ongoing	X	X	X	None, data collection only
8.3.1.1.5	Continue Pine Snake Passive Integrated Transponder (PIT) Tag Program	Ongoing	X	X	X	None, data collection only
Objective 8.3.1.2 Monitor Bird Species of Concern						
8.3.1.2.1	Bald Eagle Survey	Ongoing	X	X	X	None, data collection only
8.3.1.2.2	Marshland Bird Survey	New	X	X		None, beneficial impacts expected

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.3.1.3 Monitor Plant Species of Concern						
8.3.1.3.1	Conduct Lakehurst Plant Survey	Ongoing	X	X	X	None, data collection only
Objective 8.3.1.4 Protect Sensitive Habitat						
8.3.1.4.1	Sensitive Species Planning	Ongoing	X	X	X	None, data collection only
Objective 8.3.1.5 Continue Bat Presence/Absence Monitoring						
8.3.1.5.1	Continue Mist Net Surveys for northern long-eared bat (NLEB)	Ongoing	X	X	X	None, data collection only
Objective 8.4.1.1 Maintain State and Federal Water Quality Standards						
8.4.1.1.1	Annual Meeting with Water Quality Manager	Ongoing	X			None, administrative action only
Objective 8.5.1.1 Comply with Wetland Laws						
8.5.1.1.1	Maintain Communication with USACE (wetlands)	Ongoing	X	X	X	None, administrative action only
Objective 8.5.1.2 Protect Wetlands from Operational Activities						
8.5.1.2.1	Inventory of Flora and Fauna	New	X	X		None, beneficial impacts expected
Objective 8.6.1.1 Vegetation Assessment						
8.6.1.1.1	Perform Phase II of Flora/Fauna Survey at Dix	Ongoing	X	X		None, beneficial impacts expected
8.6.1.1.2	Reseed Exposed Soil	Ongoing	X			None, beneficial impacts expected
8.6.1.1.3	Develop Re-Seeding Schedule	Ongoing	X	X	X	None, data collection only
8.6.1.1.4	Review New Projects and Contracts	Ongoing	X	X	X	None, data collection only
Objective 8.6.2.1 Use Best Management Practices (BMPs) to Reduce Noxious and Invasive Plants						
8.6.2.1.1	Monitor and Control Lespedeza and Phragmites	Ongoing	X	X	X	None, data collection only
Objective 8.6.2.2 Baseline Survey for Noxious Plants						
8.6.2.2.1	Update Noxious Weed Inventory and Plan	Ongoing	X	X		None, administrative action only

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.6.2.3 Implementation of Weed Control Plan						
8.6.2.3.1	Provide Info and Mapping to Clear Airfield Ditches	Ongoing	X	X	X	None, data collection only
Objective 8.7.1.1 Biological Threat Protection						
8.7.1.1.1	Tree Pest Inspection	Ongoing	X	X	X	None, data collection only
8.7.1.1.2	Tree Hazard Survey	Ongoing	X	X	X	None, data collection only
8.7.1.1.3	Remove Infected Trees	Ongoing	X		X	No impact, continuation of existing practice
Objective 8.7.1.2 Update Tree Inventory						
8.7.1.2.1	Update GIS Inventory of Trees	Ongoing	X	X	X	None, data collection only
8.7.1.2.2	Re-inventory Forest Plantation	Ongoing	X	X	X	None, data collection only
8.7.1.2.3	Forest Inventory Update	Ongoing	X	X	X	None, data collection only
Objective 8.7.1.3 Continue Firewood Program						
8.7.1.3.1	Manage JB MDL Firewood Program	Ongoing	X	X	X	No impact, continuation of existing practice
8.7.1.3.2	NEPA Documentation and Conduct Timber Sales	Ongoing	X		X	No impact, continuation of existing practice
Objective 8.7.2.1 Mechanically Reduce Tree Density						
8.7.2.1.1	Mechanical Thinning Area A (139ac)	New	X			Potential adverse impacts addressed in this EA
8.7.2.1.2	Mechanical Thinning Area B (22ac)	New	X			Potential adverse impacts addressed in this EA
8.7.2.1.3	Mechanical Thinning Area C (62ac)	New	X			Potential adverse impacts addressed in this EA
8.7.2.1.4	Mechanical Thinning Area D (78ac)	New	X			Potential adverse impacts addressed in this EA
8.7.2.1.5	Mechanical Thinning Area F (19ac)	New	X			Potential adverse impacts addressed in this EA
8.7.2.1.6	Remediate Catastrophic Death/Damage to Forest Stand, If Required	Ongoing	X		X	No impact, continuation of existing practice

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.8.1.1 Continue Prescribed Burning Program						
8.8.1.1.1	Update and Implement JBMDL Wildland Fire Plan	Ongoing	X	X	X	No impact, continuation of existing practice
8.8.1.1.2	Map Wildland Fires with GPS	Ongoing	X	X	X	None, data collection only
Objective 8.9.1.1 Control Pest Species Using BMPs						
8.9.1.1.1	Monitor Forest Pests	Ongoing	X	X	X	None, data collection only
8.9.1.1.2	Control Feral Dogs and Cats	Ongoing	X			None, beneficial impacts expected
8.9.1.1.3	Monitor Beaver Pests	Ongoing	X	X	X	None, data collection only
Objective 8.9.1.2 Mosquito Control Efforts						
8.9.1.2.1	Mosquito Control to Reduce West Nile Virus	Ongoing	X			None, beneficial impacts expected
Objective 8.9.1.3 Spotted Lanternfly Control Efforts						
8.9.1.3.1	Control Spotted Lanternfly	New	X			None, beneficial impacts expected
Objective 8.10.1.1 Maintain Airfield Deer Fence						
8.10.1.1.1	Survey Fence for Gaps, Tunnels and Holes	Ongoing	X	X	X	None, data collection only
Objective 8.10.1.2 Prevent Flocking Birds from Nesting on Airfields						
8.10.1.2.1	Bird Nesting Prevention	Ongoing	X		X	None, beneficial impacts expected
8.10.1.2.2	Water Retention Assessment	Ongoing	X	X	X	None, data collection only
8.10.1.2.3	Maintain State and Federal Permits	Ongoing	X	X	X	None, administrative action only
8.10.1.2.4	Test Runway Research	Ongoing	X	X		None, temporary study
8.10.1.2.5	Lakehurst Mowing/Tree Clearing	New	X			Potential adverse impacts addressed in this EA
Objective 8.11.1.1 Stabilize Hanover Furnace Area						
8.11.1.1.1	Enhance the Natural Terrain for Protection of Hanover Furnace	Ongoing	X			None, beneficial impacts expected
Objective 8.12.1.1 Use Laurel Pond as and Outdoor Interpretive Center						
8.12.1.1.1	Litter Cleanup-Range 14 and Lake of the Woods	Ongoing	X			None, beneficial impacts expected

Project Number	Objective/Project Title	Ongoing or New Action*	Alternative 1	Alternative 2	No Action Alternative	Potential for Adverse Impact (New Projects Only)
Objective 8.12.1.3 Update Natural Resource Outreach Brochures						
8.12.1.3.1	Update Publicly Distributed Natural Resource Outreach Brochures	Ongoing	X			No impact
Objective 8.13.1.1 Incorporate Natural Resource Data into GeoBase						
8.13.1.1.1	Collect Existing Natural Resource Data	Ongoing	X	X		None, data collection only
8.13.1.1.2	Maintain GIS Database for T&E Species	Ongoing	X		X	None, data collection only
Objective 8.13.1.2 Annual GIS Data Review						
8.13.1.2.1	Review Natural Resource GIS Data	Ongoing	X		X	None, data collection only
8.13.1.2.2	Sync GIS Data with GeoBase	Ongoing	X		X	None, data collection only
Objective 8.13.2.1 Use GIS Information to Develop Goals and Objectives						
8.13.2.1.1	Review GIS Data for Gaps	Ongoing	X		X	None, data collection only

***Table Note: Ongoing or continued actions include initiatives previously addressed under the 2015 INRMP. Proposed new initiatives under the 2020 INRMP are fully analyzed in this EA.**

2.2 Selection Standards

NEPA and CEQ regulations mandate the consideration of reasonable alternatives for the proposed action. “Reasonable alternatives” are those that could also be utilized to meet the purpose of and need for the proposed action and are constrained by environmental laws and regulations, DoD and USAF policies, the nature and extent of existing natural resources, and the specific requirements within the INRMP. Pursuant to the requirements of 32 CFR §989, the USAF Environmental Impact Analysis Process (EIAP) regulations selection standards are used to identify alternatives for meeting the purpose and need for the action.

The following items were the focus of the selection standards criteria:

- Compliance with AFMAN 32-7003, Integrated Natural Resources Management.
- Promote the enhancement and sustainment of the military mission within the natural infrastructure of JB MDL by providing realistic operational areas with no net loss in the capability of military lands to support the military mission.
- Maintain viable populations of native species, especially keystone and rare species found on JB MDL.
- Proactively manage T&E species to ensure regulatory compliance with the Endangered Species Act (ESA) and state laws.
- Minimize use conflicts with operations and/or missions of each facility.
- Restore and maintain ecological processes of native ecosystems located on JB MDL, including pinelands and wetland complexes.
- Meet and/or exceed mission and safety requirements, including BASH.
- Cost effectiveness.

2.3 Detailed Description of the Alternatives

The USAF proposes to conduct integrated ecosystem management of natural resources at JB MDL under the updated 2020 INRMP. The Proposed Action is to implement the updated INRMP, which is consistent with the SAIA, as amended, with an emphasis on new projects including vegetative management changes at Dix and Lakehurst. This EA will formally address three alternatives: Alternative 1: Full implementation of the Updated INRMP; Alternative 2: Partial Implementation of the INRMP (data collection, planning, and agency meeting initiatives only); and Alternative 3: The No Action Alternative.

2.3.1 Alternative 1: (Preferred Alternative) Full Implementation of the 2020 INRMP

The Proposed Action under Alternative 1 includes the continuation of JB MDL’s existing natural resource management practices addressed in the 2015 INRMP, including conducting surveys, invasive species control, prescribed burning, among others, and new practices involving vegetation management at Lakehurst and Dix. All management practices would be integrated and implemented in the context of the installation's mission support needs and regional setting, including general planning, comprehensive range planning, cultural resources management planning, BASH planning, and pest management planning.

As shown in **Table 2:1**, new projects, including the replacement of floating fishing docks, marshland bird surveys, flora and fauna inventories, and updating plans, would result in beneficial impacts. No adverse impacts are expected. These minor projects as well as those listed as administrative actions do not warrant further analysis under NEPA; therefore, the focus

of the analysis for Alternative 1 will be limited to three new vegetative management strategies proposed at Dix and Lakehurst, as described below.

2.3.1.1 Annual Mowing Lakehurst and Dix (Project 8.1.1.5.2)

JB MDL is proposing to conduct annual mowing of grassland fields on 34.1 acres at Dix (**Figure 2**) and 122 acres at Lakehurst (**Figure 3**) starting in early 2023. The project areas at Dix include a grouping of five parcels (totaling 18.5 acres) southwest of McGuire Airfield (hereafter referred to as the Dix West project area) and a grouping of five parcels (totaling 15.6 acres) east of McGuire Airfield (hereafter referred to as the Dix East project area). The areas proposed for annual mowing at Lakehurst include the linear-shaped wildlife cover strips on the west side of Lakehurst, a 23.6-acre parcel north of the test runway and two larger parcels located on the east side of Lakehurst.

All the areas proposed for annual mowing have been subject to previous disturbance and are mapped by NJDEP as old fields or urban built-up land. The Dix West and Dix East project areas were previously used extensively for navigational training. Annual mowing, in conjunction with a prescribed burning (approximately every 4-5 years), would maintain early successional, native warm season grasslands and discourage pioneering trees from encroaching on the existing grassland habitat. The presence of healthy stands of native warm season grasses would also help preclude the encroachment of various invasive species. Seasonal timing restrictions for mowing would serve to avoid impacts to listed species including reptiles and grassland birds.

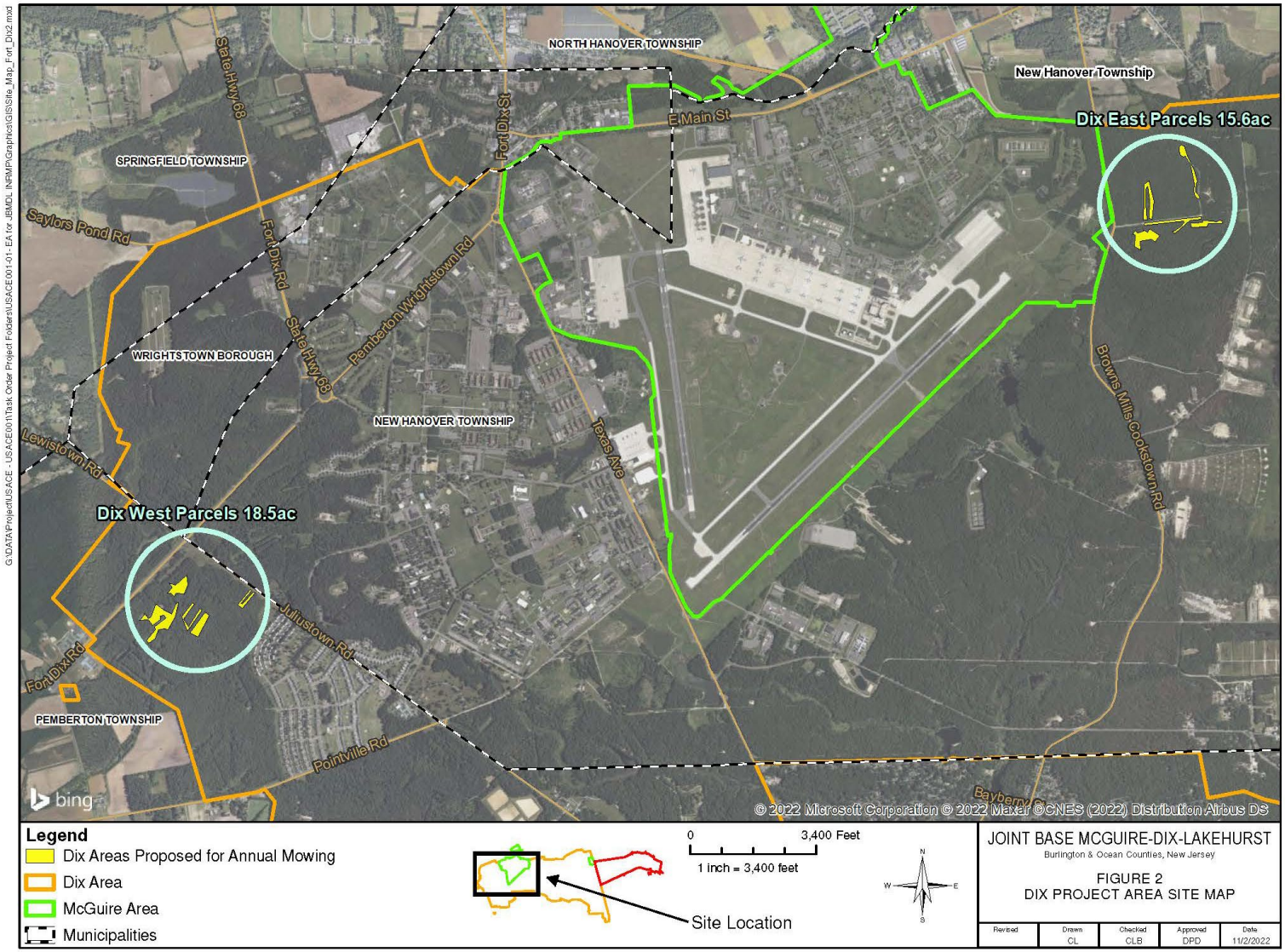

Figure 2: Dix Project Area Site Map

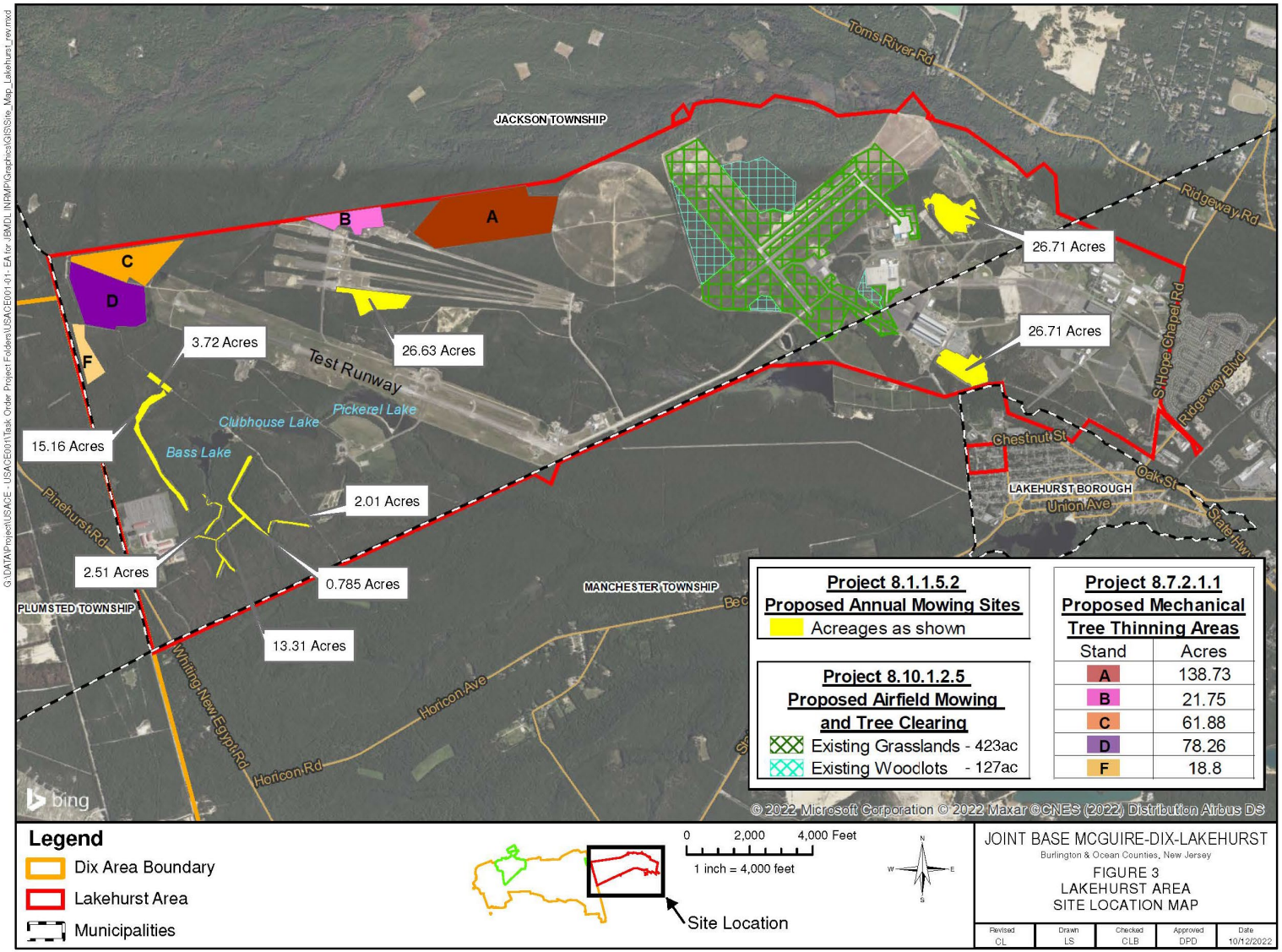

Figure 3: Lakehurst Project Area Site Map

2.3.1.2 Mechanically Reduce Tree Density (Projects 8.7.2.1.1 through 8.7.2.1.5)

Under Alternative 1, JB MDL would conduct selective thinning at five distinct forest stands (A, B, C, D, and F), situated along the north and northwest boundaries of Lakehurst (**Figure 3**). The primary purpose of this activity is to reduce the risk of catastrophic wildfire resulting from nearby tactical training activities. The secondary purpose is to increase ground-level vegetation diversity, which will, in turn, increase suitable habitats for ground-dwelling mammals, amphibians, reptiles, and avian species.

Thinning would primarily target pine species (pitch pine, Virginia pine, short leaf pine) while favoring hardwoods such as Oak species and Atlantic White Cedar. Selective thinning would be based upon diameter at breast height (DBH), defined as 1.35 meters up from the highest point of ground at the tree's base. The targeted pine species currently have a DBH of 15–25 inches, with heights ranging from 25–60 feet. The current basal area of trees within the proposed thinning locations measures upwards of 100–120 square feet per acre. The end goal is to reduce that count to roughly 30–50 square feet per acre. After the trees are felled, the stumps will be ground to the existing elevation. The root systems are to be left in place to reduce the potential for erosion. The exact method for thinning would be based on the condition of each forest stand. Chainsaws would be used for most of the removal process. In areas where larger machinery can be used, brush mowers and/or rolling drum choppers may be utilized. Trees would be marked prior to cutting and all precautions would be taken to ensure that the removal process will not damage intermediate habitat and residual trees. Prior to working within wetlands, proper steps will be taken to delineate riparian buffers to ensure water quality and related waterbodies will not be adversely affected by these activities.

2.3.1.3 Lakehurst Airfield Mowing/Tree Clearing (Project 8.10.1.2.5)

Control of wildlife activity in the vicinity of an airfield is essential to safe flight operations. As is the case at all airfields, a bird/wildlife strike hazard exists at Lakehurst airfield and its vicinity due to resident and migratory birds and other wildlife. Daily and seasonal bird/wildlife movements create various hazardous conditions (JB MDL 2017).

The 305th Air Mobility Wing (AMW) Flight Safety office is responsible for the BASH program at Lakehurst and applies BASH initiatives under an approved BASH plan. Due to resident and migratory birds and wildlife present at Lakehurst and the associated bird/wildlife strike hazard, JB MDL implements several procedures to manage the BASH risk, including grounds maintenance to discourage BASH-risk species from inhabiting the airfield. On-site staff from the USDA-WS employ an integrated pest management plan including trapping and relocation, if possible, harassment with pyrotechnics and propane cannon, depredation, surveys of the airfield for wildlife, and informal surveys of surrounding properties and water bodies. The JB MDL BASH program plan includes airfield mowing and is required by, and conducted in accordance with, USAF safety directives (USAF 2020). Airfield mowing is essential to safe flying, which is essential to the USAF mission.

The current mowing plan calls for approximately 423 acres of grasslands surrounding Lakehurst airfield to be cut in August after the grassland bird breeding season (April 15 through July 31) and then maintained at the 7–14-inch interval for the rest of the year. Prior years had a slightly different mowing plan where grass was controlled (e.g., mowed, prescribed burns) once in late fall at the end of the summer breeding season. However, during that time, grass reached a height of two to three feet during the summer. Although the current mowing plan was an improvement over previous years, the height of 7–14 inches should be maintained year-round to minimize the attractiveness of Lakehurst airfield for potential nesting grassland birds (USDA 2019).

Under Alternative 1, JB MDL would modify the current vegetation management program at Lakehurst airfield to maximize flight safety, minimize the BASH risk, and comply with the revised AFI 91-212 12 March 2020, (the USAF Mishap Prevention Program) while minimizing impact to state-listed species to the extent practicable as required by AFMAN 32-7003 Integrated Natural Resources Management. This would include maintaining grass heights on the airfield year-round between 7–14 inches.

According to AFI 91-212, keeping the grass height of 7–14 inches within the security fence is necessary to discourage flocking species, minimize wildlife food attractants, and remove cover for large and small mammals. This standardized grass height minimizes mowing frequency and improves growing conditions. Furthermore, maintaining a uniform monoculture of grasses and eliminating forbs is necessary to discourage broad-leaf plants from producing seeds and berries that are more attractive to wildlife than grass seed. A dense monoculture of grass would also eliminate bare spots which can be used by killdeer for nesting or by columbids for foraging. To obtain the recommended monoculture of 7–14-inch grass on an airfield, multiple strategies would be employed, such as application of herbicides and adjustments to mowing schedules (USDA, 2019).

Another vegetation management strategy proposed under Alternative 1 entails the removal or exclusion of woodlots within the perimeter fence surrounding Lakehurst airfield (**Figure 3**). These woodlots on the airfield produce an edge effect (i.e., when two different habitats meet), which is attractive to many wildlife species. These woodlots also provide perching options, nesting locations, and cover for birds and mammals, enabling them to go undetected within the airport's perimeter fence. Woodlot edges also increase the potential for a higher concentration of ground fuels pertaining to wildfires and controlled burning. Currently, there are approximately 127 acres of pine forest within the airfield perimeter fence. Under the Alternative 1, these woodlots would be removed and converted to an appropriate airfield vegetation type.

2.3.2 Alternative 2: Partial Implementation of the INRMP

Under Alternative 2, JB MDL would implement only select ongoing and new INRMP projects involving data collection, planning activities, meetings, and administrative actions. Ongoing projects would include flora and fauna surveys, invasive species monitoring, wildland fire mapping, and pest inspections. New projects implemented under this alternative would include completing marshland bird surveys at JB MDL, conducting an inventory of wetland flora and fauna throughout various areas at JB MDL, updating the noxious weed inventory and plan, and collecting and standardizing natural resource data. Active restoration projects and new vegetative management would not be implemented under Alternative 2.

2.3.3 No Action Alternative

Implementation of the No Action Alternative means that the management measures set forth in the updated INRMP would not be implemented and only those measures outlined in the 2015 INRMP would remain in effect. Implementing this alternative would require JB MDL to manage vegetation at Lakehurst as it is today, which presents safety issues relative to wildlife aircraft strike hazards. Management consistent with the current INRMP would also mean that data used to make decisions with regard to natural resources would become outdated. Lastly, the 2015 INRMP does not account for recent and foreseeable changes to development at JB MDL that have occurred since 2015. Because the No Action Alternative fails to meet the purpose of and need for the Proposed Action, it is not a viable alternative. However, since inclusion of a No Action Alternative is prescribed by CEQ regulations, the No Action Alternative is analyzed in this EA.

2.4 Alternatives Eliminated from Further Consideration

Under NEPA, reasonable alternatives must be considered in the EA. Considering alternatives helps to avoid unnecessary impacts and allows an analysis of reasonable ways to achieve the proposed action and satisfy the stated purpose and need. A reasonable alternative must be capable of implementation and meet the selection standards.

During the development of the updated INRMP, the installation consulted with natural resource professionals at the USFWS, NJDEP, and other relevant agencies to formulate specific goals and objectives for the conservation and protection of natural resources on the installation. Following the development of goals and objectives, various natural resource management activities that could be implemented to meet these goals and objectives were discussed and analyzed, which led to the development of a specific list of projects that would be carried forward in the INRMP as the best alternative to conserve and rehabilitate natural resources at JB MDL within the military mission context. Specific projects considered during INRMP development that either did not meet the goals, were considered ineffective, or were prohibitively expensive were removed from consideration.

In addition, JB MDL considered a compliance-driven management alternative to the Proposed Action, which would involve a minimal approach by only managing natural resource components that are required by laws and regulations. However, under this alternative, an ecosystem-based approach would not be implemented; rather, management actions would only be implemented if there were a possibility of a statutory or regulatory violation, such as the CWA or ESA. While this alternative would make it unlikely for JB MDL to receive a notice of violation for noncompliance with natural resources regulations, it would not comply with the spirit of the SAIA, as amended, which allows for the sustainable, multipurpose use of natural resources subject to military security.

3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

This section addresses the environmental resources and conditions most likely to be affected by the Proposed Action and Alternatives. It provides sources of information to serve as a baseline from which to identify and evaluate potential environmental consequences that could result from implementation of the Alternatives. The affected environment within JB MDL and the surrounding area is described in detail in the 2020 INRMP, which is available on JB MDL's website: https://www.jbmdl.jb.mil/Home/Public-Affairs/. Baseline information for identifying potential impacts of the alternatives is summarized in this EA.

The Region of Influence (ROI) for the Affected Environment is defined based on each environmental resource area. In the case of resource areas with localized impacts, this would include JB MDL in the areas that are sited for vegetation management. For resource areas where impacts may extend beyond the boundaries of the area itself, the ROI is JB MDL property as a whole.

Potential environmental consequences (impacts or effects) fall into three categories: direct, indirect, and cumulative. A direct impact results from the Proposed Action and occurs at the same time and place as the action. Indirect impacts are caused by the Proposed Action and "are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR Part 1508). Cumulative effects result from incremental impacts of the Proposed Action, when added to other past, present, and reasonably foreseeable future actions, regardless of which agency, person, or private entity undertakes such actions.

Under the resource categories analyzed, the duration of each impact is described either as short term, such as with those that only occur during construction, or long term, such as with impacts related to ongoing operations. Each impact can be categorized as beneficial or adverse. Beneficial impacts typically improve the resource or issue, while adverse impacts negatively affect the resource or issue. The intensity of a potential impact refers to its severity and accounts for: whether the action establishes a precedent for further actions with significant effects; the level of uncertainty about projected impacts; and the extent to which the action threatens to violate federal, state, or local environmental protection laws or constrain future activities.

For the purposes of this EA, the thresholds of change for the intensity of impacts are defined as follows:

- Negligible: When the impact is localized and not measurable at the lowest level of detection.
- Minor: When the impact is localized and slight, but detectable.
- Moderate: When the impact is readily apparent and appreciable.
- Major: When the impact is severely or significantly disruptive to current conditions.

Impacts or effects that are classified as "negligible," "minor," or "moderate" are considered as less-than-significant. Significant impacts are classified as "major." Measures that would be implemented to avoid or minimize potential impacts to the environment, including those that would otherwise be significant, are also described. **Table 3:1** presents a preliminary summary of potential environmental consequences which may result from implementation of project alternatives.

Table 3:1. Summary of Potential Environmental Consequences

Environmental Parameter	Alternative 1	Alternative 2	No Action Alternative
Air Quality	Minor	No Effect	No Effect
Water Resources	Minor	No Effect	No Effect
Earth Resources	Minor	No Effect	No Effect
Cultural Resources	Negligible	No Effect	No Effect
Biological Resources	Minor/Moderate	No Effect	No Effect
Land Use	Negligible	No Effect	No Effect
Noise	Negligible	No Effect	No Effect
Infrastructure, Utilities and Transportation	Negligible	No Effect	No Effect
Public Health and Safety	Negligible	No Effect	No Effect
Aesthetics	Negligible	No Effect	No Effect
Hazardous Materials and Waste	Minor	No Effect	No Effect
Socioeconomics and Environment Justice	Negligible	No Effect	No Effect

3.1 Resources Eliminated from Further Consideration

All the potentially relevant environmental resource areas listed in **Table 3:1** were initially considered for analysis in this EA. However, in compliance with NEPA, CEQ, and 32 CFR Part 989 regulations, the discussion of the affected environment and environmental consequences should focus only on those resource areas potentially subject to adverse impacts and those with potentially significant environmental issues.

Implementation of the Proposed Action under any Alternative was determined to be unlikely to have an appreciable effect, either positive or negative, on the resource categories listed below. Consequently, the following resources areas have been omitted from further detailed analysis.

- *Noise:* Noise levels associated with activities outlined in the INRMP would be negligible. Activities associated with these actions would involve the short term, occasional use of heavy equipment for forestry and wildland fire management activities. Types of heavy equipment utilized for the proposed activities are already in use at JB MDL, so there would be very little change in noise levels from baseline conditions. Furthermore, vegetation management activities would be temporary and considered insignificant contributors to the overall noise environment at JB MDL given existing ground and air operations. As a result, noise is eliminated from further analysis.
- *Infrastructure, Utilities, and Transportation*: The actions identified in the INRMP would not require construction of facilities, the addition of parking spaces, result in an increase in personnel (which could affect road systems or utility use), or require any alteration to existing runways. Implementation of the INRMP will not require any additional infrastructure, nor will it place a burden on existing infrastructure. As a result, infrastructure, utilities, and transportation were eliminated from further analysis.
- *Public Health and Safety:* The health and safety of on-site military and civilian workers at JB MDL are safeguarded by numerous DoD and military-branch-specific requirements designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and the U.S. Environmental Protection Agency (USEPA). These standards specify health and safety requirements, the amount and type of training required for workers, the use of Personal Protective Equipment (PPE), administrative controls, engineering controls, and permissible exposure limits for workplace stressors. OSHA requirements applicable to the Proposed Action address public health and safety during the proposed vegetation

management activities. As a result, further discussion involving this topic was eliminated from further analysis.

- *Aesthetics:* The activities proposed in the INRMP would occur adjacent to active runways of McGuire and Lakehurst airfields. There are no scenic resources including vistas or scenic highways near the project areas. Implementation of the INRMP would not introduce a new source of light or glare which would adversely affect day or nighttime views or otherwise degrade the visual character of any area. Therefore, this topic was removed from further analysis.
- *Socioeconomics and Environmental Justice:* Activities considered in the INRMP are within the boundaries of JB MDL and would not result in adverse impact to the human population. There would be no change in population levels, employment rates, cost of housing, income levels, or characteristics in race or ethnicity. Since no socioeconomic impacts are expected, this topic was removed from further analysis.

The Proposed Action does not have the potential to result in disproportionate impacts to low income or minority populations and/or children in accordance with EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (11 February 1994), and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (23 April 1997). Implementation of the Proposed Action under any Alternative would not result in housing relocations, changes in employment opportunities, significant health or safety hazards, significant increase in air emissions, significant noise impacts, or any increase in traffic. Areas to be managed are surrounded by security fencing, with site access restricted. As a result, socioeconomics and environmental justice are eliminated from further analysis.

3.2 Air Quality

Air quality is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions in that region.

3.2.1 Regulatory Setting

3.2.1.1 National Ambient Air Quality Standards

Under the Clean Air Act (CAA), the USEPA has established National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) to protect public health and welfare (**Table 3:2**). They represent the maximum allowable atmospheric concentrations for six “criteria pollutants” including carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), ozone, suspended particulate matter less than or equal to 10 microns in diameter (PM10), fine particulate matter less than or equal to 2.5 microns in diameter (PM2.5), and lead (Pb). CO, SO2, Pb, and some particulates are emitted directly into the atmosphere from emissions sources. Ozone, NO2, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes.

Under the CAA, the country is classified into “attainment,” “nonattainment,” and “maintenance” areas. Any area not meeting the NAAQS is designated as “nonattainment” for the specific pollutant or pollutants, whereas areas that meet the NAAQS are designated as “attainment.” Maintenance areas are those areas that were previously designated as “nonattainment” and subsequently redesignated as “attainment,” subject to development of a maintenance plan.

Table 3:2. National Ambient Air Quality Standards

Criteria Pollutant	Federal Standard (averaging period) *
CO	35 parts per million (ppm) (1 hour)
	9 ppm (8 hours)
NO2	0.100 ppm (1 hour) 0.053 ppm (annual arithmetic mean)
O3	0.070 ppm (8 hours)
PM2.5	12 micrograms per meter (µg/m3) (annual arithmetic mean)
	35 µg/m3 (24 hours)
PM10	150 µg/m3 (24 hours)
SO2	0.5 ppm (3 hours, secondary standard) 0.075 ppm (1 hour) **
Lead	0.15 µg/m3 (rolling 3-month average)

* National standards other than O3, particulate matter, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The O3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24- hour average concentration above 150 µg/m3 is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

** To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 parts per billion.

µg/m3 = micrograms per cubic meter
NA = not applicable
ppm = parts per million, by volume

The NJDEP Division of Air Quality implements all the NAAQS under NJAC 7:27-13. Areas that meet the NAAQS for a criterion pollutant are designated “in attainment.” Areas where a criterion pollutant level exceeds the NAAQS are designated as “nonattainment” areas. O3 nonattainment areas are categorized based on the severity of the pollution problem: marginal, moderate, serious, severe, or extreme. CO and PM10 nonattainment areas are categorized as either moderate or serious. A maintenance area is one that has been re-designated from nonattainment status and has an approved maintenance plan under Section 175 of the CAA. Where insufficient data exist to determine an area’s attainment status, it is designated unclassifiable or in attainment.

2.3.1.2 New Source Review and Clean Air Act General Conformity

Under the USEPA New Source Review (NSR) program, stationary sources of air pollution are required to obtain permits before construction of the source begins. NSR Prevention of Significant Deterioration (PSD) permit approval would be required if the proposed project was either: (1) a new source, with the potential to emit 250 tons per year or more of an attainment pollutant; or (2) an existing major source of emissions, making a major modification in an attainment area, and resulting in a net emission increase above specified levels. Nonattainment NSR approval would be required if the proposed project were a new, stationary, or major source of emissions that made a major modification in a nonattainment area, with potential to emit nonattainment pollutants exceeding the NSR thresholds.

The CAA General Conformity Rule (40 CFR, Parts 6, 51, and 93) requires federal agencies to make written conformity determinations for federal actions in or affecting nonattainment or maintenance areas. If the emissions of a criteria pollutant (or its precursors) do not exceed the de minimis level, then the federal action has minimal air quality impact and the action is

determined to conform for the pollutant under study; therefore, no further analysis is necessary. The de minimus thresholds for the ozone precursors are 100 tons per year (tpy) of NO_X and 50 tpy for volatile organic compounds (VOC) (USEPA 1993).

2.3.1.3 Greenhouse Gases

Greenhouse Gases (GHGs) are gas emissions that trap heat in the atmosphere and include water vapor, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2), O3, and several hydrocarbons (HCs) and chlorofluorocarbons (CFCs). Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the Earth's surface. A gas's global warming potential provides a relative basis for calculating its CO2 equivalent, which is a metric measure used to compare the emissions from various GHGs based upon their global warming potential. CO2 has a global warming potential of 1 and is therefore the standard to which all other GHGs are measured. Because CO2 is uniformly mixed throughout the troposphere and stratosphere, the climatic impact of these emissions does not depend upon the source location on the earth (i.e., regional climatic impacts/changes are a function of global emissions). These emissions occur from natural processes and human activities.

Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences worldwide.

Revised draft guidance from CEQ, dated April 20, 2022, recommends that agencies consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.

3.2.2 Affected Environment

The Region of Influence (ROI) for the considered impacts to criteria air pollutants include both Burlington and Ocean Counties where the projects proposed in the INRMP will occur. Both counties are situated in a regional, multi-state, designated nonattainment area for Ozone (USEPA 2022):

- 8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
- 8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

Both Burlington and Ocean counties are in attainment for all other criteria air pollutants.

3.2.3 Environmental Consequences

The threshold level of significance for air quality is defined as a violation of an ambient air quality or regulatory threshold.

3.2.3.1 Alternative 1 – Full Implementation of INRMP

3.2.3.1.1 Criteria Pollutants

Air quality impacts associated with Alternative 1 were evaluated based on whether a reasonable potential exists for a violation of an ambient air quality standard or regulatory threshold given the extent and duration of the planned resource management actions. The increase in acreage of forest, woodlots, and grassland to be managed, and the increased frequency of mowing to

attain compliance with AFI 91-212, will result in an increase in prescribed burning and non-road engines and equipment operational hours, leading to additional emissions, including dust and other particles in the air. Thus, implementation of Alternative 1 would result in increases in minor, direct adverse impacts on overall air quality.

An estimate of emissions is provided in **Table 3:3** to show the alternative's emissions would, on a year-to-year basis, be less than the de minimis levels established in the conformity regulation when considering the five-year implementation period of the resource management actions.

Emissions from Alternative 1 were estimated using Excel spreadsheets. Emissions from planned tree thinning and airfield mowing operations were estimated using emission factors from USAF's guide for estimating emissions from mobile sources at USAF installations (USAF, 2021). Emissions from prescribed burning were estimated using USEPA's AP-42 Compilation of Air Emissions Factors (Fifth Edition) for stationary point and area sources (USEPA, 1995).

Resource management activities associated with Alternative 1 would begin in 2023. Emission estimates account for the total acres of tree thinning/clearing between Projects 8.10.1.2.5 (woodlots only) and 8.7.2.1.1, in terms of total acreage to be maintained, to be divided equally over the five-year maintenance term (i.e., 90 acres/year). In addition, mowing progress to accomplish Projects 8.10.1.2.5 (grasslands only) and 8.1.1.5.2 will be limited to 544 acres per year over the five-year term. Prescribed burning is assumed to take place only in Year 2 and substitute for the mowing actions associated with Project 8.1.1.5.2 for that year.

Notably, air quality impacts associated with mechanical tree thinning/clearing, prescribed burning, and approximately 88% of mowing would originate in the Lakehurst Area or Ocean County. The balance of air quality impacts from mowing would originate in the Dix Project Area or Burlington County.

The management activities would not result in the permanent increase of number of personnel or on-road vehicular activities in the maintenance area and, therefore, an increase in air emissions. Additionally, no new stationary sources of air emission would result from Alternative 1.

Table 3:3. Estimated Emissions from Implementation of Alternative 1

Emission Source	Project Emissions (tons/year)						
	CO	VOC	NOx[1]	SO_2	PM_{10}	$PM_{2.5}$	CO_2e[2]
Year 1 Emissions from Mechanical Tree Thinning and Mowing	86.64	2.12	0.77	<0.01	0.09	0.08	387.01
Year 2 Emissions from Mechanical Tree Thinning and Prescribed Burning and Mowing	94.30	3.25	0.77	<0.01	1.28	1.22	560.21
Year 3 Emissions from Mechanical Tree Thinning and Mowing	94.30	3.25	0.77	<0.01	1.28	1.22	560.21
Year 4 Emissions from Mechanical Tree Thinning and Mowing	86.64	2.12	0.77	<0.01	0.09	0.08	387.01
Year 5 Emissions from Mechanical Tree Thinning and Mowing	86.64	2.12	0.77	<0.01	0.09	0.08	387.01
de minimis levels (tons per year)	NA	50	100	NA	NA	NA	NA
Annual Thresholds Exceeded for Any Year?	No	No	No	No	No	No	NA

[1] Nitrogen oxides (NO_x) in the term used to describe the sum of nitric oxide, NO_2, and other oxides of nitrogen.
[2] Carbon dioxide equivalent or CO_2e means the number of metric tons of CO_2 emissions with the same global warming potential as one metric ton of another greenhouse gas.

Table 3:3 summarizes the projected total air emissions from the subject resource management activities associated with Alternative 1. As shown, emissions associated with Alternative 1 would be below regulatory and de minimums thresholds and not subject to a PSD permit or NSR requirements. A copy of the calculations used to develop these estimates is presented as Appendix C.

Best Management Practices (BMPs) would be implemented to reduce potential impacts to air quality. Contractors responsible for all resource management activities would maintain non-road engines and landscaping equipment in accordance with manufacturers' specifications to reduce exhaust emissions and minimize unnecessary noise impacts. Contractors and installation personnel would also not leave vehicles idling when not in use.

3.2.3.1.2. Climate Change and Greenhouse Gases

Alternative 1 would generate GHG emissions over the five-year maintenance term from prescribed burning and the operation of non-road engines and landscaping equipment. Estimated peak GHG emissions would be 560.21 tons of carbon dioxide equivalent in 2024 and 2025, when prescribed burning, mechanical tree thinning/clearing and mowing actions are all occurring. Therefore, minor, adverse impacts to climate change as a result of GHG emissions at JB MDL would be expected from implementation of Alternative 1.

3.2.3.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2, JB MDL would implement only select ongoing and new INRMP projects involving data collection, planning activities, meetings, and administrative actions. Active restoration projects and new vegetative management activities would not be implemented under Alternative 2. Trees would not be subject to removal or thinning and there would be no change in the current mowing schedule. Therefore, no short- or long-term impacts to air quality are anticipated.

3.2.3.3 No Action Alternative

Under the No Action Alternative, the new management measures set forth in the updated INRMP would not be implemented and only those measures outlined in the 2015 INRMP would remain in effect. JB MDL would continue its current mowing and prescribed burning schedule to manage vegetation at Lakehurst as it is today. Therefore, no additional short- or long-term impacts to air quality would be anticipated.

3.3 Water Resources

Surface water resources generally consist of rivers, streams, and lakes, while groundwater occurs underground in saturated zones (aquifers), supplying springs and wells. “Wetlands” are defined by the USACE as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR 328.3). In addition to providing habitat for a host of animal and plant species, wetlands perform valuable functions including stormwater storage and attenuation, groundwater recharge, nutrient cycling, sediment detention, and water quality improvement.

This section provides a discussion of surface water and groundwater characteristics in the vicinity of the project areas at Lakehurst and Dix. Floodplain management is also addressed in this section.

3.3.1 Regulatory Setting

Wetlands are currently regulated by the USACE under Section 404 of the CWA as a subset of all “Waters of the United States.” Executive Order 11990, Protection of Wetlands, requires that federal agencies adopt a policy to avoid, to the extent possible, long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.

The primary governing regulation for freshwater wetlands in the State of New Jersey is the New Jersey Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 et seq.). As stated in the Freshwater Wetlands Protection Act (FWPA) Rules (NJAC 7:7A), NJDEP has been responsible for administering the federal wetlands program (also known as the Federal 404 program) since 1994. This program was previously administered in New Jersey by the USACE, and the USACE still maintains responsibility for the Federal 404 program in interstate and navigable waters, including adjacent wetlands. The FWPA states that “the New Jersey Pinelands Commission (NJPC) may provide for more stringent regulation of activities in and around freshwater wetland areas within its jurisdiction” (NJAC 7:7A-1.1). In addition, the NJPC administers NJDEP’s general permit program within the Pinelands National Reserve. Given that JB MDL is located within the Pinelands National Reserve, primacy for addressing compliance with wetland regulations resides with the NJPC (JB MDL, 2017).

EO 11988, Floodplain Management (24 May 1997), requires federal agencies to 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 unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year. Although FEMA evaluates flood potential risk for 100- and 500-year flood events, FEMA does not hold any regulatory authority over potential floodplain development on military installations (JB MDL, 2017).

3.3.2 Affected Environment

3.3.2.1 Groundwater

JB MDL obtains potable water from both surface and groundwater sources (USAF 2020b). The Kirkwood-Cohansey Aquifer system underlies much of JB MDL and supplies most of the water for the installation. The Kirkwood-Cohansey Aquifer system is relatively shallow in depth and is highly permeable, making potential contamination a high concern (USGS, 2011). The Potomac-Raritan-Magothy Formation underlies the Kirkwood-Cohansey Aquifer system. The installation's largest capacity well taps into the Potomac-Raritan-Magothy Aquifer at about 1,580 feet above mean sea level (JB MDL, 2021a). JB MDL also diverts water from Greenwood Branch on the North Branch of Rancocas Creek as a source of drinking water (USAF 2020b).

3.3.2.2 Surface Water

Surface waters are classified by the NJDEP based on designated uses. Freshwaters are classified as FW1 (not subject to any man-made wastewater discharges) and FW2 waters (all other freshwaters). All surface waters within the Pinelands Protection and Preservation Area (including those found at JB MDL) are classified as Pinelands Waters (PL).

3.3.2.2.1 Dix

The areas proposed for annual mowing at Dix are situated in the Lower Delaware Watershed Region within two separate Watershed Management Areas (WMAs). The Dix East project areas are in the Pemberton, Fort Dix Tributary sub-watershed of the Rancocas WMA while the Dix West project areas are mapped within the South Run - Jumping Brook sub-watershed of the Assiscunk, Crosswicks and Doctors WMA.

As shown in **Figure 4**, Dix Area Water Resources Map, several perennial watercourses are located near the areas proposed for annual mowing at Dix. Bud Run and its tributaries extend through the middle of the Dix West project areas, while tributaries of South Run occur near the Dix East project areas. Both watercourses are classified by NJDEP as PL; there are no lakes or ponds within 800 feet of the Dix project areas (NJDEP, 2022).

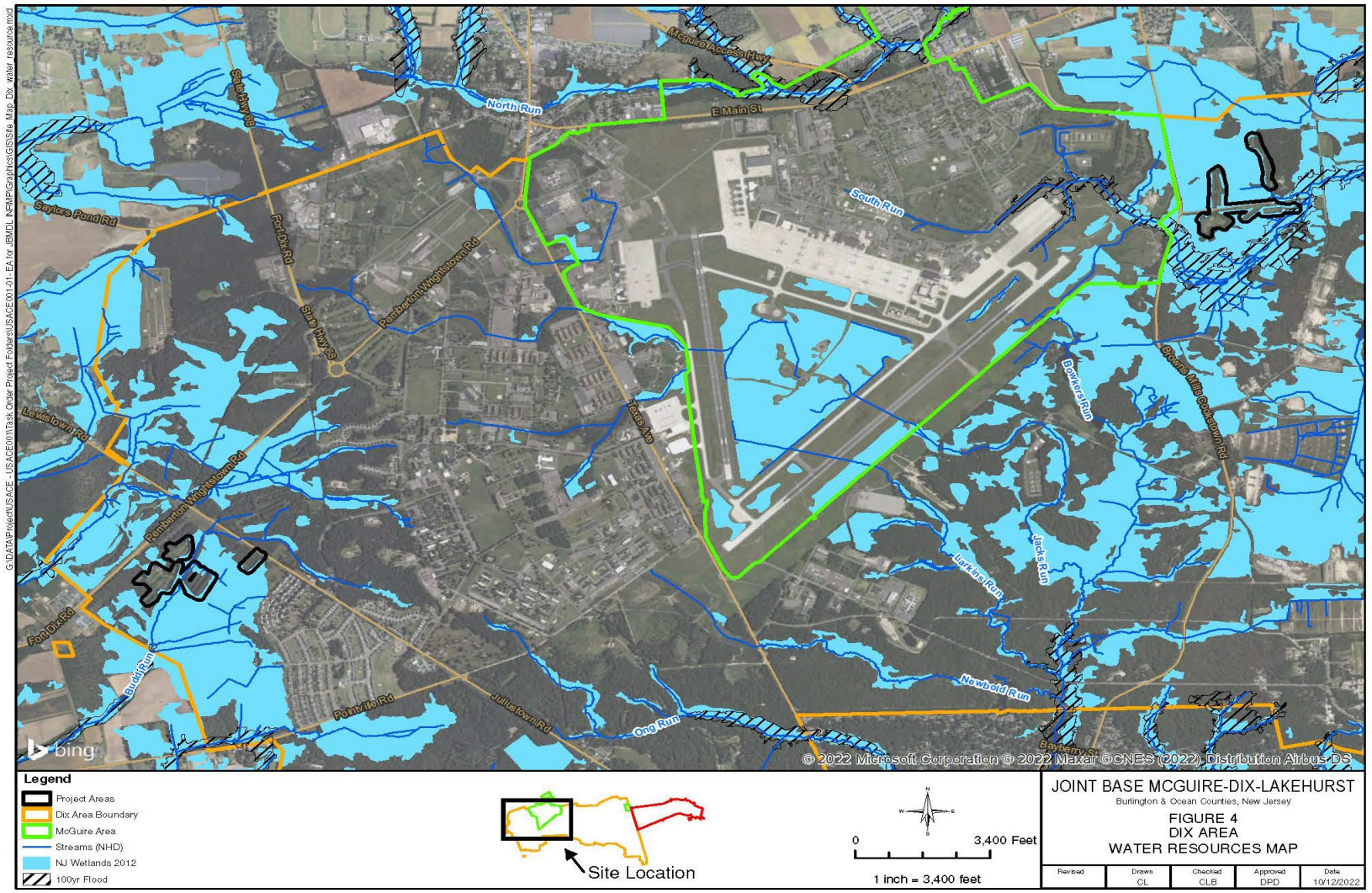

Figure 4: Dix Area Water Resources Map

3.3.2.2.2 Lakehurst

Lakehurst occurs in the Union/Ridgeway Branch (Toms River) Watershed within the Barnegat Bay Watershed Management Area. Lakehurst is further broken down into four sub-watersheds including Harris Branch / Borden's Mill Branch sub-watershed on Lakehurst's northwestern corner, Ridgeway Branch sub-watershed on its northern boundary, Black's Branch sub-watershed on the southwestern corner, and Manapaqua Brook sub-watershed along the installation's southern and eastern boundaries (NJDEP 2022).

Surface water drainage at Lakehurst runs primarily southeast and discharges to the Ridgeway and Harris Branches to the north, and to the Black, Manapaqua, Middle Ruckels, and North Ruckels Branches to the south, eventually discharging into Toms River. Several headwater tributaries to these streams originate on the Lakehurst section of JB MDL. Natural lakes are virtually absent from the Pinelands, and any occurring in the region are the result of damming to form mill ponds, lakes, or cranberry bogs. At JB MDL, North Ruckles Branch was dammed in the 1950s to create three small lakes: Pickerel Lake, Clubhouse Lake, and Bass Lake (JB MDL, 2021a).

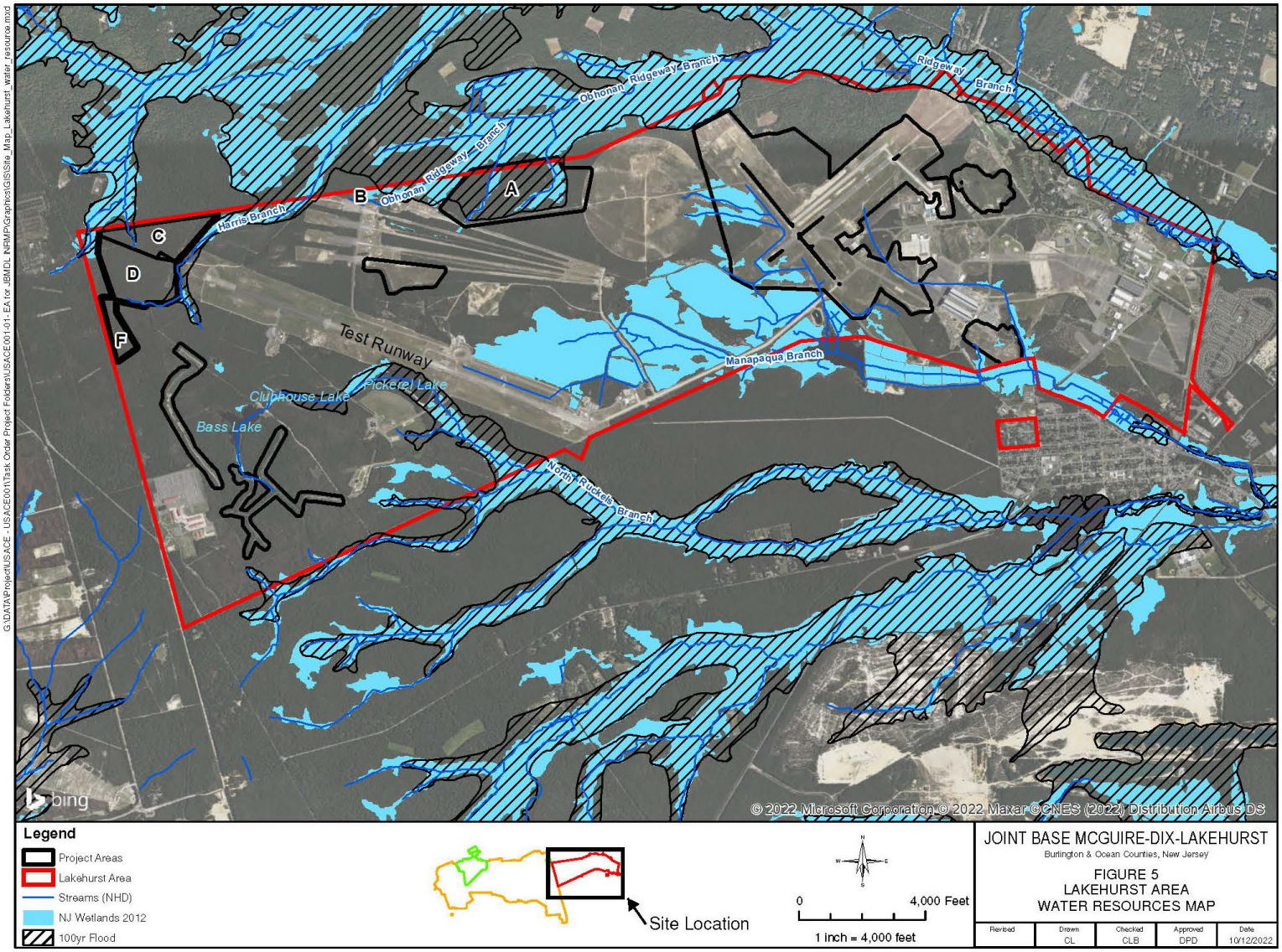

Figure 5: Lakehurst Area Water Resources Map

3.3.2.2.3 Proposed Annual Mowing Sites at Lakehurst (Project 8.1.1.5.2)

There are several surface water features that occur in and adjacent to Lakehurst's project areas proposed for annual mowing. North Ruckles Branch extends from Bass, Clubhouse, and Pickerel Lakes from the north extending around the proposed mowing areas on the southwestern corner of Lakehurst; the Manapaqua Branch and tributaries are situated in proximity to the proposed annual mowing site southeast of the Lakehurst airfield.

3.3.2.2.4 Proposed Mechanical Tree Thinning Sites (Project 8.7.2.1.1)

Several streams and tributaries of the Obhonan Ridgeway Branch extend from the north into proposed tree thinning areas A and B. Harris Branch extends into JB MDL between tree thinning areas B and C and runs along the eastern boundary of tree thinning areas C and D before entering Area D from the south. Several Harris Branch surface water impoundments occur along the eastern boundary of Areas C and D. Success Branch enters Area C from JB MDL's northern boundary.

3.3.2.2.5 Proposed Airfield Mowing and Woodlot Clearing (Project 8.10.1.2.5)

Several surface water features are present within the project area boundary at Lakehurst airfield, including a ditch and the pond located off Allen Road. Stormwater detention ponds, which do not retain water, are also found on Lakehurst airfield. No issues have been noted relative to temporary standing water on paved surfaces or in grasslands surrounding the airfield after periods of heavy precipitation (USDA-WS 2019). Tributaries of Manapaqua Brook are mapped within the Lakehurst airfield project area. Many of these features are connected by artificial means using underground piping, culverts, and man-made ditches.

3.3.2.3 Wetlands

There are over 9,000 acres of land classified as wetlands at JB MDL (USAF 2020b). Most of these wetlands are classified as Palustrine (nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation).

3.3.2.3.1 Dix

Due to its large land area (31,003 acres), formal wetlands delineations are conducted on a project-by-project basis at Dix. For smaller projects, JB MDL currently uses the 2012 NJDEP wetlands map for general planning purposes. Based on NJDEP wetlands maps, the Dix East and West parcels proposed for annual mowing are surrounded by deciduous wooded and disturbed wetlands.

3.3.2.3.2 Lakehurst

Wetlands on the eastern third of Lakehurst were last ground truthed in 1996, while wetlands in the western two-thirds of Lakehurst were ground truthed in 2000. According to the 2012 NJDEP wetlands map, wetlands at Lakehurst are mostly associated with the rivers and streams that run parallel and into the Lakehurst Area including Ridgeway Branch (to the east), Manapaqua Branch (to the south), and Obhonan Ridgeway Branch (to the north).

3.3.2.3.3 Proposed Annual Mowing Sites at Lakehurst (Project 8.1.1.5.2)

With the exception of small, deciduous scrub/shrub wetlands near North Ruckles Branch and coniferous wooded wetlands southeast of Hangers 5 and 6, there are very few mapped wetlands within or adjacent to the project areas at Lakehurst proposed for mowing.

3.3.2.3.4 Proposed Mechanical Tree Thinning Sites (Project 8.7.2.1.1)

Wetland areas classified by NJDEP as Mixed Wooded, Coniferous Wooded Wetlands, and Coniferous Scrub/Shrub Wetlands are mapped within mechanical tree thinning areas A and B. These wetland areas primarily occur within the floodplain of the Obhonan Ridgeway Branch. In addition, areas classified as Mixed Scrub/Shrub Wetlands are mapped along Success Branch near the northern section of Area C. Deciduous Scrub/Shrub Wetlands occur in close proximity to the southern boundary of Area D; no NJDEP mapped wetlands were identified in proposed tree thinning Area F.

3.3.2.3.5 Proposed Airfield Mowing and Woodlot Clearing (Project 8.10.1.2.5)

Wetland features at Lakehurst airfield are situated near the southwestern corner of the airfield. Wetlands mapped within the managed grassland areas are classified by NJDEP as disturbed or modified. Wetlands mapped by NJDEP as Coniferous Wooded Wetlands are found within the woodlots surrounding the airfield.

3.3.2.4 Floodplains

According to FEMA's National Flood Hazard Mapping, the project areas for the proposed Lakehurst airfield mowing and woodlot clearing project (Project 8.10.1.2.5) and the areas at Dix and Lakehurst proposed for annual mowing (under Project 8.1.1.5.2) are not mapped within the 100-year floodplain. However, several sections of the area proposed for mechanical tree thinning (Project 8.7.2.1.1) are situated within the 100-year floodplain including the majority of Area A and portions of Areas B and C.

3.3.3 Environmental Consequences

The threshold level of significance for groundwater, surface water, and wetlands are activities that result in a violation of the state of New Jersey's water quality criteria, a violation of federal or commonwealth discharge permits, or an unpermitted placement of structures or other fill material within regulated waters and/or floodplains.

3.3.3.1 Alternative 1 – Full Implementation of INRMP

Vegetative management activities, including tree thinning, trimming, and mowing, are regularly conducted in and around the project areas at Dix and Lakehurst for fire safety and to improve the health of forests and grasslands. Water resources are present within and near these areas; however, these management activities are not conducted within areas of standing or flowing water or where the groundwater table is at the ground surface.

Full implementation of the INRMP would not result in impacts to groundwater as the proposed project activities do involve earth disturbance. The proposed projects would not require new or additional withdrawals of groundwater, nor would the proposed activities result in the discharge of pollutants into groundwater sources. Furthermore, no additional impervious surface would be created that would prevent infiltration of precipitation and runoff. Since no deficit in aquifer volume or a lowering of the local groundwater table would occur, impacts to groundwater resources are negligible.

Portions of the project areas at Dix and Lakehurst are situated within or adjacent to areas mapped as streams and/or wetlands. To protect these areas, JB MDL would establish protective buffers around all streams and wetlands in accordance with the requirements of the Pinelands CMP. Furthermore, vegetation would be removed by cutting and grinding stumps to existing elevation rather than grubbing. This method would be used so that existing root systems would remain intact to stabilize the surrounding soil. JB MDL has a permit for maintaining/trimming

vegetation in wetlands and the Proposed Action would be consistent with that permit. The project would maintain compliance with EO 11990, as wetlands would not be destroyed or degraded as a result of vegetation management activities described in the INMRP. Full implementation of the INRMP under Alternative 1 would not result in construction of temporary or permanent structures in the floodplain, the placement of fill in the floodplain nor change the surface elevation of any areas within the floodplain. Therefore, no impact to the floodplain would occur.

3.3.3.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2 only maintenance projects would be implemented. There would be no alteration to water resources; therefore, Alternative 2 would not result in any short- or long-term impacts.

3.3.3.3 No Action Alternative

The No Action Alternative would result in the continued vegetation management program, including mowing and periodic prescribed burning activities. There would be no alteration to water resources; therefore, the No Action Alternative would not result in any short- or long-term impacts.

3.4 Earth Resources

Earth resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, and soils. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Soils are the unconsolidated materials overlying bedrock or other parent material. The following section provides a description of physiography, geology, topography, and soils within and in the vicinity of the study areas at JB MDL.

3.4.1 Regulatory Setting

Consideration of geologic resources extends to prime or unique farmlands. The Farmland Protection Policy Act (FPPA) was enacted in 1981 in order to minimize the loss of prime farmland and unique farmlands as a result of federal actions. The implementing procedures of the FPPA require federal agencies to evaluate the adverse effects of their activities on farmland, which includes prime and unique farmland and farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects.

3.4.2 Affected Environment

3.4.2.1 Physiography

New Jersey is divided into four physiographic provinces, which are areas with similar sequences of rock types, geologic structures, and a common geologic history. The northwestern section of New Jersey is part of the Valley and Ridge Province, which is characterized by long, parallel ridges and valleys formed by folded and faulted limestone shales and sandstones of early and middle Paleozoic age. Bordering the Valley and Ridge Province to the southeast, the Highlands Province consists of metamorphic rocks of Precambrian age. The Highlands Province is separated from the Piedmont Province to the south by a series of major fault lines which extend to the Delaware River. The Piedmont Province is characterized by gently rolling hills. Overlapping the Piedmont Province to the southeast lies the relatively flat terrain of the Coastal Plain Province, which consists of unconsolidated sedimentary formations such as sands, clays, and marls (USGS 2022). The Coastal Plain is further divided by a ridge of hills into the Inner

and Outer Coastal Plain. The western half of JB MDL, which contains the project areas associated with Dix, is situated within the Inner Coastal Plain, while Lakehurst is situated on the Outer Coastal Plain. The Inner Coastal Plain slopes primarily to the northwest from the dividing ridge while the Outer Coastal Plain slopes primarily to the southeast. Relief is generally low within both Coastal Plain regions (USGS 2022).

3.4.2.2 Geology

Past geologic processes have contributed greatly 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 New Jersey 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. 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 2020a).

3.4.2.3 Topography

Elevations at Lakehurst and Dix range from 60–100 ft above msl. The topography of the sites subject to vegetative management are relatively flat with minor/gradual changes in elevation within each area.

3.4.2.4 Soils

The USDA Natural Resources Conservation Service web soil survey was used to identify the predominant soil associations found within the project area(s) as discussed below. Full descriptions of soil types underlying JB MDL are provided in the INMRP.

3.4.2.4.1 Annual Mowing Sites (Project 8.1.1.5.2)

Adelphia sandy clay loam, truncated, 0 to 5 percent slopes, underlies the Dix West project areas on Dix. This moderately drained soil type is typically found on flats and is not classified as Prime Farmland. The Dix East project areas are underlain by several types, the most common is Lakehurst Fine Sand, 0 to 5 percent slopes, which is classified as a Farmland of Local Importance. Also present are sandy/loamy soils from the Buddtown series, which are classified as Prime Farmland.

The most common soil type underlying the project areas proposed for annual mowing at Lakehurst is Lakewood sand, 5 to 10 percent slopes. Lakewood sand is typically found on flats and knolls and is derived from fluviomarine deposits. This soil type is excessively drained and is classified as Farmland of Local Importance (USDA 2022). Other soil types underlying the annual mowing project areas at Lakehurst include: Psamments, waste substratum, 0 to 8 percent slopes; Evesboro sand, 0 to 5 percent slopes and Downer loamy sand, 0 to 5 percent slopes. Psamments is not classified as Prime Farmland while Evesboro is classified as Farmland of Local Importance. Downer loamy sand is classified as Farmland of Statewide Importance.

3.4.2.4.2 Proposed Mechanical Tree Thinning Sites (Project 8.7.2.1.1)

The project areas proposed for mechanical tree thinning (Sites A, B, C, D, and F) comprise a combined total of approximately 320 acres of Lakehurst. The most common type, Lakehurst Sand, 0 to 5 percent slopes, underlies approximately 114 acres of the total area. Lakehurst sand is derived from sandy, fluviomarine deposits and is typically found on flats and dunes. Lakehurst Sand is moderately well drained. Atsion sand, 0 to 2 percent slopes is the next most common soil type, underlying approximately 93 acres. Atsion sand is classified as hydric and is associated with the tributaries that flow through the project areas proposed for tree thinning.

3.4.2.4.3 Proposed Airfield Mowing and Woodlot Clearing (Project 8.10.1.2.5)

The project area surrounding Lakehurst airfield comprises approximately 50 acres and is underlain by 10 different soil classifications. Approximately 25 percent of the land area is underlain by Lakewood sands, 0 to 5 percent slopes. Evesboro sand, 0 to 5 percent slopes, is the second most common soil type, underlying almost 200 acres of the project area. Evesboro sand was formed on sandy eolian deposits is usually found on low hills. Evesboro is excessively drained and is considered a Farmland of Local Importance. The paved runway and taxiway areas, which comprise approximately 20 percent of the project area, is classified as Urban Land.

3.4.3 Environmental Consequences

The threshold for a significant impact on earth resources is one that would result in: (1) a substantial loss of soil; or (2) an increased potential for erosion of soils to a level where standard erosion control measures would not prevent the erosion.

3.4.3.1 Alternative 1 – Full Implementation of INRMP

Alternative 1 would not result in adverse impacts to earth resources because the proposed activities involve mowing, tree thinning and tree cutting only; no grading, discing, plowing nor excavations below the existing grade would occur. While prime or unique farmland soils underly portions of the project areas, none of these areas are currently available for agriculture use; therefore, there would be no loss of farmland or farmland of importance. There are no unique geological resources within the project areas, therefore, impacts to earth resources would be considered negligible.

3.4.3.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2 only maintenance projects would be implemented. There would be no alteration to the ground surface or soils; therefore, Alternative 2 would not result in any short- or long-term impacts to earth resources.

3.4.3.3 No Action Alternative

The No Action Alternative would result in the continued vegetation management program, including mowing and periodic prescribed burning activities. There would be no alteration to the ground surface or soils; therefore, the No Action Alternative would not result in any short- or long-term impacts to earth resources.

3.5 Cultural Resources

Cultural resources are heritage-related resources including prehistoric and historic sites, buildings, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other purposes. Depending on the condition and historic use, such resources might provide insight

into the cultural practices of previous civilizations, or they might retain cultural and religious significance to modern groups.

Cultural resources are subdivided into archaeological resources (i.e., prehistoric or historic sites where human activity has left physical evidence to that activity, but no structures remain standing); architectural resources (i.e., buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); or resources of traditional, religious, or cultural significance to Native American tribes. Archaeological resources comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles). Architectural resources include standing buildings, bridges, dams, or other structures of historic significance. Both architectural and archeological resources are considered eligible for listing on the National Register of Historic Places (NRHP) based on integrity and significance in relation to four NRHP Criteria and seven NRHP Criteria Considerations. Resources of traditional, religious, or cultural significance to Native American tribes can include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

3.5.1 Regulatory Setting

All federal installations and agencies are directed by a range of federal laws (as implemented by CFRs) to establish programs for the preservation of historic properties, as a core value of the U.S. Government. In accordance with Title 54 U.S.C. 306108 *et seq.,* (formerly known as Section 106 of the National Historic Preservation Act of 1966), federal agencies are required to consider the effects of their undertakings on historic properties. U.S.C Title 54 regulations set forth government policy and procedures regarding "historic properties" including, districts, sites, buildings, structures, and objects included in or eligible for the NRHP. Resources and locations that meet one or more criteria in 36 CFR 60.4 are determined by the Air Force as eligible for nomination to the NRHP.

To consider the effects of its undertakings on historic properties, JB MDL is required to consult with the NJHPO and applicable federally recognized Native American Tribes. JB MDL, in consultation with the NJHPO and Tribes, is required to assess direct and indirect effects of a proposed action on historic properties and to resolve any adverse effects that may occur (36 CFR Part 800).

The cultural resources management program at JB MDL is conducted in accordance with AFMAN 32-7003, Environmental Conservation, Chapter 2, Cultural Resources Management. The Integrated Cultural Resources Management Plan (ICRMP, Air Force 2019) provides the internal compliance and management tool that integrates the entirety of the cultural resources program with ongoing mission activities. The ICRMP establishes priorities for the identification and standards for the evaluation of cultural resources and provides a schedule to accomplish program objectives during a five-year program.

3.5.2 Affected Environment

3.4.2.1 Identification of the Area of Potential Effect

The Area of Potential Effect (APE) is the geographic area(s) within which an undertaking could directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. Since the proposed projects described in the INRMP do not involve any ground-disturbing activities, and thus do not have the potential to affect archaeological resources, an APE for Archaeology was not defined for any of the Alternatives. The proposed APE for Historic Architecture (APE-Architecture), as shown in Figure 6, was limited to the section of property proposed for mowing and woodlot clearing at Lakehurst airfield (Project

8.10.1.2.5) because the proposed activities could potentially produce indirect visual impacts to surrounding historic properties.

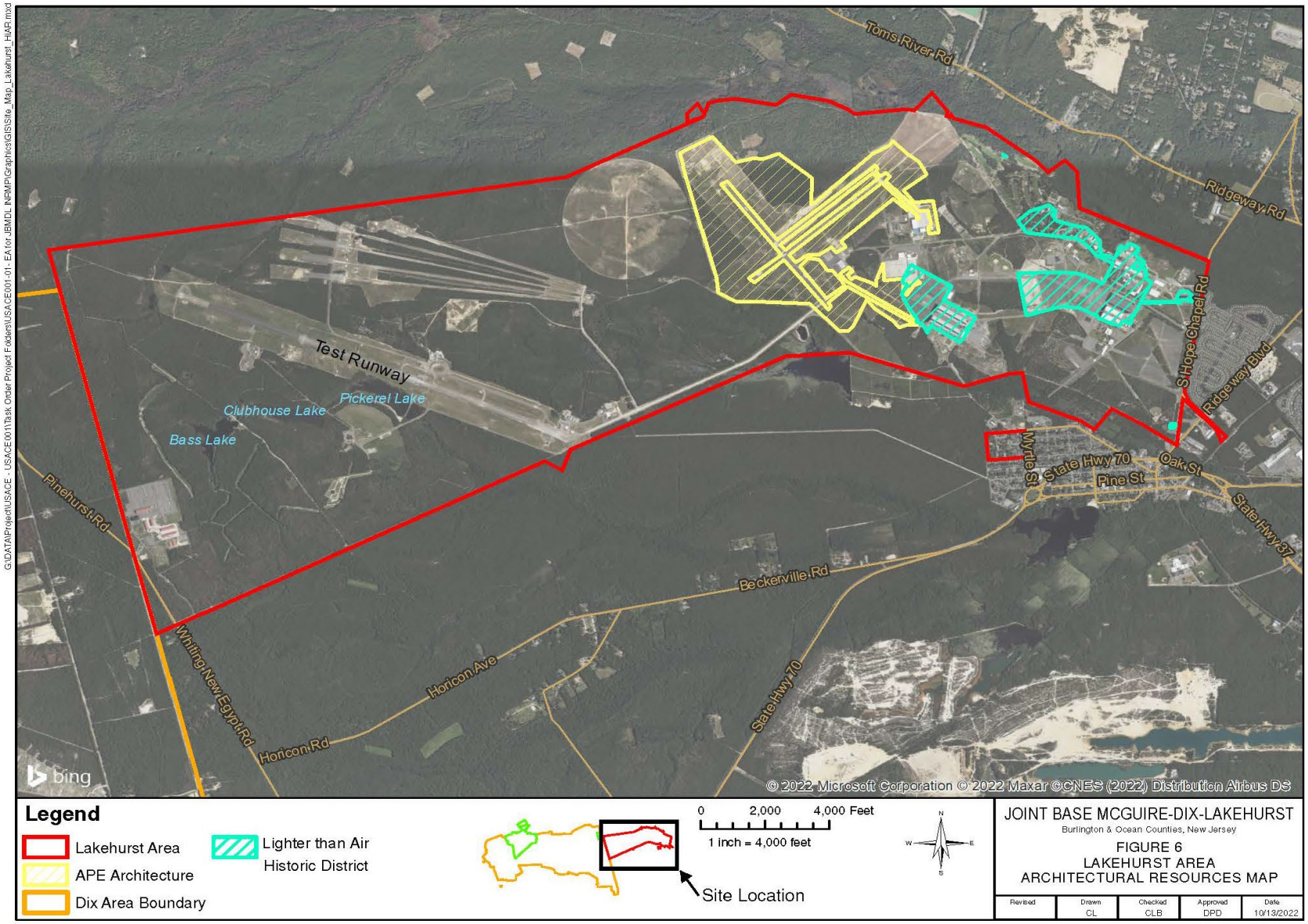

Figure 6: Lakehurst Area Architectural Resources Map

3.4.2.1.1 Historic Architectural Resources

An examination of NJDEP's Cultural Resources GIS Online Viewer, LUCY, indicates that there is one historic property eligible for the National Register of Historic Places proximate to the APE-Architecture: The Lighter-Than-Air Historic District (SHPO Opinion: 27 June 1995). The Lakehurst Lighter-Than-Air Historic District is an early air transportation historic district comprised of 70 contributing properties and 14 non-contributing properties. Contributing properties consist of buildings and structures constructed between 1919 and 1962 as part of the Navy's aviation program that involved operation of both rigid and non-rigid airships (NRHP 2005).

3.4.2.1.2 Cultural Properties

The federally recognized Delaware Nation and Delaware Tribe of Indians have cultural ancestral affiliations with the lands comprising the installation (JB MDL 2022). JB MDL invited the tribes to participate as consulting parties for this EA under Section 106 of the NHPA in letters dated 28 April 2022 (Appendix A).

No traditional cultural properties, sacred sites, or other resources of cultural significance to Native American tribes have been identified on JB MDL property (JB MDL 2022).

3.5.3 Environmental Consequences

Adverse impacts on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; general neglect of the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of the agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

3.5.3.1 Alternative 1 – Full Implementation of INRMP

On 28 April 2022, the JB MDL 2020 INRMP DOPAA was sent to the New Jersey Historic Preservation Office (NJHPO), the Delaware Nation and the Delaware Tribe of Indians for their review and comment. In its response letter signed 27 May 2022, the NJHPO concurred with JB MDL's finding that due to the limited direct and indirect impacts from the Proposed Action, there will be no adverse effect to historic properties (Appendix A).

Of the two federally recognized tribes, only the Delaware Tribe responded to the invitation to participate in this EA. Although the Delaware Tribe did not identify any properties of religious or cultural significance on JB MDL, the Tribe indicated that they would like to discuss the removal of pine trees and the potential use of herbicides. Coordination with the Delaware Tribe is ongoing.

3.5.3.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2 only maintenance projects would be implemented, no active restoration nor new vegetation management projects would be implemented. There would be no alteration to the ground surface nor existing historic districts; therefore, Alternative 2 would not result in any short- or long-term impacts to Cultural Resources.

3.5.3.3 No Action Alternative

The No Action Alternative would result in the continued vegetation management program, including mowing and periodic prescribed burning activities. There would be no new alterations to the ground surface or structures; therefore, the No Action Alternative would not result in any short- or long-term impacts to Cultural Resources.

As outlined in the USAF Integrated Cultural Resources Management Plan for JB MDL, in the case of inadvertent discovery of prehistoric or historic artifacts during tree thinning or mowing, all work would cease, the site would be secured, and the JB MDL Cultural Resources Manager would contact the NJHPO and federally recognized tribes, as applicable, within 24 hours.

3.6 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

The ROI for biological resources at Dix includes the land area within ¼-mile of the project areas proposed for mowing, where biological resources could reasonably be affected. Since the remaining INRMP projects are scattered throughout Lakehurst (7,430 acres), the ROI includes all land within the boundaries of Lakehurst.

3.6.1 Regulatory Setting

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

- Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668c)
- Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et. seq.)
- Endangered Species Preservation Act of 1966 (16 U.S.C. 1531)
- Engle Act of 1958 (10 U.S.C. 2671)
- Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (7 U.S.C. 136)
- Federal Noxious Weed Act of 1975 (7 U.S.C. 2801)
- Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901 et. seq.)
- Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661 et. seq.)
- Migratory Bird Conservation Act of 1966 (16 U.S.C. 715)
- Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-712)
- Sikes Act of 1960 (16 U.S.C. 670 et. seq.), as amended
- AFMAN 32-7003, Integrated Natural Resources Management
- EO 11987, Exotic Organisms, May 24, 1977
- EO 11991, Protection and Enhancement of Environmental Quality, May 24, 1977
- Pinelands CMP (N.J.S.A. 13:18A-1 et. Seq., N.J.A.C. 7:50 et. seq.)

Threatened or endangered species are those species afforded federal protection under the ESA and MBTA. The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the USFWS or National Oceanic and Atmospheric Administration (if applicable) to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of designated critical habitat. However, it should be noted that under the ESA (4)(a)(3)(B)(i), critical habitat shall not be designated on lands or geographical areas controlled or owned by the DoD that are subject to an INRMP under the Sikes Act; however, this does not exclude DoD from compliance with consultation requirements set forth in Section 7 of the ESA.

It is the policy of JB MDL to treat any state-protected species with the same protection afforded federally protected species whenever practicable (AFMAN 32-7003, Integrated Natural Resources Management). Although not required by the ESA, JB MDL will consider acceptable conservation measures for species protected by New Jersey State law, when such protection is not in conflict with the military mission (JB MDL, 2014).

Birds, both migratory and most native-resident bird species, are protected under the MBTA, and their conservation by federal agencies is mandated by EO 13186, Migratory Bird Conservation, (10 January 2001). Under the MBTA it is unlawful by any means or in any manner to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation. The 2003 National Defense Authorization Act gave the Secretary of the Interior authority to prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during authorized military readiness activities. The final rule authorizing the DoD to take migratory birds in such cases includes a requirement that the Armed Forces must confer with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate adverse effects of the proposed action if the action will have a significant negative effect on the sustainability of a population of a migratory bird species.

Bald and golden eagles are protected by the BGEPA. This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” Bald eagle is also a state-listed threatened species afforded protection under the BGEPA and the MBTA.

3.6.2 Affected Environment

3.6.2.1 Vegetation

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).

JB MDL is located within the New Jersey Pinelands National Reserve (Reserve) which includes over one-million acres of farms, forests, and wetlands extending through seven southern New Jersey counties. Within this system, pitch pine (*Pinus rigida*) is the single most characteristic plant species and has evolved to prosper in the droughty, acidic, and highly fire-prone conditions found throughout the Reserve. Currently, the majority of the total land area (69%) of

JB MDL is forested with pine/oak or oak/pine forest communities which includes an abundant understory vegetation of mountain laurel (*Kalmia latifolia*), highbush blueberry (*Vaccinium corymbosum*), huckleberry, vines, grasses, and wildflowers (USAF 2020b).

Vegetation within the 34.1 acres of grassland proposed for annual mowing at Dix currently consists of broad-leaved weeds and various cool season grasses, including timothy (*Phleum pratense*) and fescues (*Festuca sp*.) surrounded by woody wetlands. In the recent past, the project areas were cleared and used intensively for navigational training exercises. The intensive use helped to maintain the areas as early successional grassland fields. Currently, these areas are used less frequently and have begun reverting from the grassland community to a scrub/shrub community, particularly along the edge environments. The areas proposed for annual mowing at Lakehurst have also been previously cleared and currently contain herbaceous-dominated open fields and successional pioneer vegetation.

The project areas at Lakehurst proposed for mechanical thinning consist of dense mixed pine forest, with a crown closure varying from 30 to 50 percent. The dominant species is pitch pine; with Virginia pine (*Pinus virginiana*), and short- leaf pine (*Pinus echinata*) also present within these stands. Understory vegetation is sparse in most areas due to the dense canopy cover.

Vegetation within the Lakehurst airfield portion of JB MDL is dominated by grassland/old field surrounded by maintained turf, other landscaped areas (adjacent to buildings), and approximately 125 acres of woodlots comprised primarily of pine species.

3.6.2.2 Wildlife

Due to its location in the Pinelands, diversity of habitats, and the fact that JB MDL is surrounded by several thousand acres of state forest, wildlife management areas, and federally managed land, numerous wildlife species are found within and adjacent to JB MDL. Bird species are attracted to the considerable area of open habitats and are considered the most diverse group of vertebrates represented. In addition, JB MDL is located in the Atlantic flyway bird migration corridor (a major north–south flyway between the Delaware River to the west and the Atlantic Ocean to the east). Consequently, a large number of common bird species occur in the area during migrations, including Canada goose (*Brana canadensis*), snow goose (*Chen caerulescens*), mute swan (*Cygnus olor*), mallard (*Anas platyrhynchos*), lesser and greater scaup (*Aythya spp*.), ring-necked duck (*Aythya collaris*), red-tailed hawk (*Buteo jamaicensis*), broad-winged hawk (*Buteo platypterus*), yellow rumped warbler (*Dendroica coronata*), Cape May warbler (*Dendroica tigrina*), and white-eyed vireo (*Vireo griseus*) (JB MDL 2017).

In addition to avian species, many large to medium common mammals have been observed at JB MDL including white-tailed deer (*Odocoileus virginianus*), gray fox (*Urocyon cinereoargenteus*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*). Common medium- to small-sized mammals found throughout JB MDL include eastern gray squirrel (*Sciurus carolinensis*), red squirrel (*Tamiasciurus hudsonicus*), southern flying squirrel (*Glaucomys volans*), and eastern cottontail (*Sylvilagus floridanus*). Small mammals including white-footed mice (*Peromyscus spp*.) and pine vole (*Pitymys pinetorum*) have been observed in dryer upland areas at JB MDL. Species that occur or observed less frequently include red fox (*Vulpes fulva*), bobcat (*Lynx rufus*), and eastern coyote (*Canis latrans*). Woodchucks (*Marmota monax*) are reportedly rare in the New Jersey Pinelands, but they have been observed along grass taxiway clear zones, in scrub-shrub fields, and in lawn areas around the Lakehurst section of (JB MDL 2021a).

Common amphibians found within and near JB MDL include carpenter frog (*Rana virgatipes*), green frog (*Rana clamitans melanota*) and the southern leopard frog (*Rana utricularia)* as well

as several species of salamander. Common reptiles inhabiting JB MDL include corn snake (*Elaphe guttata),* eastern hognose snake **(***Heterodon platyrhinos),* northern black racer *(Coluber constrictor),* rough green snake *(Opheodrys aesrivus),* eastern box turtle *(Terrapene Carolina), and* northern fence lizard *(Sceloporus undulatus hyacinthinus)* (USAF 2020b).

During 2018–2019, a Wildlife Hazard Assessment (WHA) was conducted at Lakehurst airfield to identify and minimize risks of aircraft-wildlife collisions. The survey results identified 56 different species of birds and six mammal species (USDA-WS, 2019). Although the primary purpose of collecting WHA data was to determine the abundance of birds relating to the potential for bird strikes rather than population size, the data collected is valuable to identify species occurring at Lakehurst airfield. Barn swallow (*Hirundo rustica*), herring gull (*Larus argentatus*), Eastern meadowlark (*Sturnella magna*), mourning dove (*Zenaida macroura*), and American kestrel (*Falco sparverius*) were the most abundant species recorded in the WHA. Some of the most hazardous species observed during the WHA include white-tailed deer, eastern coyote, Canada goose (*Branta canadensis*), turkey vulture (*Cathartes aura*), mallard (*Anas platyrhynchos*), herring gull, and red-tailed hawk (*Buteo jamaicensis*) (USDA-WS, 2019).

3.6.2.3 Threatened and Endangered Species and Species of Concern

As described in the INRMP, JB MDL supports many rare, threatened, and endangered plant and animal species protected at the federal level, as well as those protected by the state of New Jersey. Data from 2018–2019 WHA surveys, information published by the NJDEP Landscape Project, the New Jersey Natural Heritage Program (NHP), and the USFWS Information for Planning and Consultation (IPaC) system was reviewed to identify documented locations of listed and rare species occurring at Lakehurst and within a ¼-mile radius of the project areas at Dix. In addition, in response to JB MDL's stakeholder letter requesting comments on the DOPAA, the NJDEP provided a specific list of special-status species which may be affected by the Proposed Action. The species included in NJDEP's DOPAA response letter as well as those species listed by the USFWS as endangered, threatened (or proposed endangered) and species in New Jersey listed as critically imperiled or imperiled (S1 and S2, respectively) are listed in **Table 3:4**. The species descriptions that follow were taken from the USFWS's Environmental Conservation Online System (ECOS), the Conserve Wildlife Foundation of New Jersey, or summarized from the descriptions found in the 2020 INRMP, unless otherwise noted. Additional species listed by the state as rare or of special concern are fully described in detail in the INRMP.

Table 3:4. Federal and State Listed Endangered, Threatened and Species of Special Concern Occurring within or in Proximity to the INRMP Project Areas

Common Name	Scientific Name	Status		Potential for Occurrence	
		Federal	State Status and Rank	Dix (within ¼ mile radius of proposed mowing sites)	Lakehurst
Plants					
Knieskern's beaked rush	*Rhynchospora knieskernii*	Threatened	Endangered (S2)	not documented at Dix	present on Lakehurst near jump zone
American chaffseed	*Schwalbea americana*	Endangered	none	potential to occur (NHP)	potential to occur (NHP)
Swamp pink	*Helonias bullata*	Threatened	none	documented presence	not documented

Common Name	Scientific Name	Status		Potential for Occurrence	
		Federal	State Status and Rank	Dix (within ¼ mile radius of proposed mowing sites)	Lakehurst
Juniper-leaf	*Polypremum procumbens*	none	Endangered (S1)	found on fallow fields, potential exists near Dix East parcels	not documented
Birds					
Bald eagle	*Haliaeetus leucocephalus*	none	Endangered (S1 breeding) (S2 nesting)	foraging	foraging
Barred owl	*Strix varia*	none	Threatened (S2 breeding and nesting)	breeding sighting	breeding sighting
Grasshopper sparrow	*Ammodramus savannarum*	none	Threatened (S2 breeding) (S3 nesting)	documented presence	breeding sighting
Vesper sparrow	*Pooecetes graminus*	none	Species of Special Concern	potential to occur	documented sighting
Eastern Meadowlark	*Sturnella magna*	none	Species of Special Concern	documented presence	documented presence
Horned lark	*Eremophila alpestris*	none	Threatened (S2 breeding) (S3 nesting)	not documented but potential exists	breeding sighting
Upland sandpiper	*Bartramia longicauda*	none	Endangered (S1 breeding and nesting)	not documented but potential exists	breeding sighting confirmed and non-breeding
Reptiles					
Northern pine snake	*Pituophis m. melanoleucus*	none	Threatened, (S2)	occupied habitat	occupied habitat
Corn snake	*Elaphe guttata*	none	Endangered, (S1)	occupied habitat	occupied habitat
Timber rattlesnake	*Crotalus h. horridus*	none	Endangered, (S1)	occupied habitat	occupied habitat
Bog turtle	*Glyptemys muhlenbergii*	Threatened	Endangered, (S1)	not documented but potential exists	occupied habitat
Amphibians					
Pine barrens tree frog	*Hyla andersonii*	none	Threatened, (S2)	documented presence	occupied habitat, vernal pool breeding
Mammals					
Northern long-eared bat	*Myotis septentrionalis*	Threatened*	Endangered (R4)	unlikely, no suitable summer roosting habitat in grassland fields	summer roost sites available in areas proposed for mechanical thinning

Common Name	Scientific Name	Status		Potential for Occurrence	
		Federal	State Status and Rank	Dix (within ¼ mile radius of proposed mowing sites)	Lakehurst
Tricolored bat	*Perimyotis subflavus*	Proposed Endangered*	Endangered (R4)	unlikely, no suitable summer roosting habitat in grassland fields	summer roost sites available in areas proposed for mechanical thinning
Big brown bat	*Eptesicus fuscus*	none	Species of Special Concern	foraging potential	summer roost and foraging potential
Hoary bat	*Lasiurus cinereus*	none	Species of Special Concern	foraging potential	summer roost and foraging potential
Red bat	*Lasiurus borealis*	none	Species of Special Concern	foraging potential	summer roost and foraging potential
Lepidoptera					
Frosted Elfin	*Callophrys irus*	none	Threatened	potential for occurrence	potential for occurrence
Arogos skipper	*Atrytone arogos*	none	Endangered (S1)	documented occurrence	potential for occurrence
Silver-bordered fritillary	*Boloria selene myrina*	none	Threatened (S2)	documented occurrence	potential for occurrence
Leonard's Skipper	*Hesperia leonardus*	none	Species of Special Concern	potential occurrence in grasslands	potential occurrence in grasslands
Dotted Skipper	*Hesperia attalus slossonae*	none	Species of Special Concern	potential for occurrence	potential for occurrence

Sources: USFWS DOPAA Response letter (April 2022), USFWS IPaC November 2022, NJ OPPN DOPAA Response letter (April 2022), NJ NHP (July 2022), WHA Report 2019.

3.6.2.3.1 Federally Listed Species

The USFWS was established as the primary regulatory agency responsible for protecting federally listed species under the ESA. The USFWS Official Species list generated by the IPaC system revealed that there are three federally listed plant species, two federally listed animal species, and one species proposed for listing as endangered known or having the potential to occur at JB MDL. The IPaC's Official Species list states that there are no critical habitats within USFWS jurisdiction at JB MDL.

3.6.2.3.2 Knieskern's Beaked-Rush

A semi-perennial member of the sedge family, Knieskern's beaked-rush (*Rhynchospora knieskernii*) is a grass-like plant found only in New Jersey. An obligate wetland species, it typically occurs in early successional wetland habitats, often on bog-iron substrates adjacent to slow-moving streams in the Pinelands region. This species is also found in human-disturbed wet areas that exhibit similar early successional stages due to water fluctuation or periodic disturbance from vehicles, mowing, or fire. These 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 (USAF 2020b). Knieskern's beaked-rush has been identified at the Jump Circle on the Lakehurst side of JB MDL. Three quarters of the Jump Circle is mowed in late fall/early winter, while one-quarter undergoes prescribed burning. This mowing/burn cycle is rotated every year to control woody species from colonizing this area. Threats to Knieskern's beaked-rush include habitat loss from development, agriculture, hydrologic modification, and other wetland modifications; excessive disturbance from vehicle use, trash dumping, and other activities; and natural vegetative succession of the open, sparsely vegetated substrate preferred by this species (USAF 2020b).

3.6.2.3.3 American Chaffseed

American chaffseed (*Schwalbea americana)* is a federally listed, endangered herb that requires frequent fire or understory removal to persist. Due to the disappearance of the species from over half of its range, American chaffseed was listed as an endangered species in 1992. Although this herb was never historically observed at JB MDL, the remaining natural occurrence of American chaffseed in New Jersey occurs in the vicinity of JB MDL's boundary. Suitable habitat for the species exists on JB MDL as a result of prescribed burns and a mowing regime maintaining suitable grassland areas at an early successional stage, which potentially could provide prime habitat for the species.

3.6.2.3.4 Swamp Pink

Swamp pink (*Helonias bullata)* is a federally listed threatened species in New Jersey that occurs in a variety of wetland habitats, including swampy forested wetlands bordering meandering streams; headwater wetlands; sphagnous, hummocky, dense, Atlantic white cedar swamps; meadows; bogs; and spring seepage areas. It has smooth, oblong, dark green leaves that form an evergreen rosette. In spring, some rosettes produce a flowering stalk that can grow over three feet tall. The stalk is topped by a 1- to 3-inch-long cluster of 30 to 50 small, fragrant, pink flowers dotted with pale blue anthers. The evergreen leaves of swamp pink can be seen year-round; flowering occurs between March and May. Habitat for swamp pink has been documented at Dix, Lakehurst, and McGuire areas. In December 2015, a swamp pink colony was discovered at Dix in a stream section of Gaunt's Brook (USAF 2020b).

3.6.2.3.5 Bog Turtle

The bog turtle (*Glyptemys muhlenbergii*) is listed as federally threatened and state endangered. With an adult carapace length ranging from only 3.1 to 4.5 inches, this species is the smallest freshwater turtle and one of the smallest turtles in the world. The bog turtle is dark in color with a distinct reddish orange to yellow patch behind the tympanum (ear membrane) on either side of the head, sometimes merging into a continuous band on the neck. The plastron is also brown or black, but often with lighter yellow blotches towards the medial and anterior scute edges. A mature male bog turtle has a concave plastron and a long, thick tail with the vent posterior to the rear edge of the carapace with tail extended. The female has a flat plastron and a thinner, smaller tail with the vent at or beneath the rear carapace edge (USFWS 2022a). Suitable habitat exists on all three areas of JB MDL but the only confirmed sightings of bog turtle were in 1988 and 1993 on the southeast corner of Lakehurst. In 2004 and 2005, extensive surveys were conducted for bog turtle on Dix, but no bog turtles were found. Natural Resource personnel continue surveying for this species (USAF 2020b).

3.6.2.3.6 Northern Long-eared Bat

The northern long-eared bat (NLEB) (*Myotis septentrionalis*) is a temperate, insectivorous bat whose life cycle can be coarsely divided into two primary phases: reproduction and hibernation. NLEB hibernate in caves or mines during winter and then emerge in early spring, with males dispersing and remaining solitary until mating season at the end of the summer. Summer habitat of the NLEB generally includes upland and riparian forest within heavily forested landscapes (Ford et al. 2005, Henderson et al. 2008) roosting within tree cavities or underneath the exfoliating bark of trees such as sugar maple (*Acer saccharum*), black locust (*Robinia pseudoacacia*), red oak (*Quercus rubra*), or snags. The suitability of a roost tree is determined by its condition (dead or alive), the quantity of loose bark on it, the tree's solar exposure and proximity to other trees, and the tree's spatial relationship to water sources and foraging areas. NLEB will also roost in man-made structures such as buildings, barns, or bat houses. Roost trees are usually found within intact forests, close to the core and away from large clearings, roads, or other sharp edges (Menzel et al. 2002, Owen et al. 2003, and Carter). By the end of November, the majority of NLEBs are in hibernation. These bats hibernate in small numbers, but typically share hibernacula with little brown (*Myotis lucifugus)*, big brown (*Eptesicus fuscus*), eastern small-footed (*Myotis leibii)*, tri-colored (*Perimyotis subflavus)*, and Indiana bats (*Myotis sodalis)* (PWE 2015). During hibernation, individual bats may awaken and fly between hibernacula, without feeding, before returning to a state of torpor (period of inactivity).

JB MDL completed acoustic monitoring surveys for bats 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 the presence of acoustical call files associated with NLEB along the southern border of the Lakehurst section and the northern border of the Dix section of JB MDL. Mist net surveys conducted in 2015 (CTR Wildlife Consulting) and 2018 (USFWS) confirmed a consistent presence of big brown and eastern red bats (*Lasiurus borealis*) on the base, along with a few hoary bats. No NLEB, little brown bat, nor tri-colored bat were captured during the mist net surveys.

During the 2018 survey, an unknown Myotis species escaped the mist net before it could be identified. Ten days after the conclusion of the 2018 mist nest efforts, a NLEB 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.

The USFWS listed the NLEB as threatened in 2015. Since then, a highly contagious fungal disease known as white nose syndrome has spread across nearly 80% of its range and is expected to cover the entire range by 2025, prompting a proposal to classify NLEB as endangered under the ESA. The new, final listing determination for the NLEB was completed by the USFWS on November 30, 2022, with an effective date of January 30, 2023. On January 25, 2023, however, the effective date of the final rule to reclassify the NLEB from threatened to endangered under the ESA was extended by 60 days, to March 31, 2023. A Federal Register notice extending the effective date was published on January 26, 2023, under Docket No. FWS-R3-ES-2021-0140. When the final rule is published, the NLEB would lose the 4(d) rule that would allow activities, such as seasonal tree removal, to occur, as 4(d) rules only apply to threatened species.

3.6.2.3.7 Tri-colored Bat

Tri-colored bat (TCB) (*Perimyotis subflavus*) is one of the smallest bats in eastern North America, weighing in at a minute 46 grams, roughly the same weight as a quarter. It is distinguished by its unique tricolored fur that appears dark at the base, lighter in the middle, and dark at the tip. TCB often appear yellowish (varying from pale yellow to nearly orange), but may

also appear silvery-gray, chocolate brown, or black (Barbour and Davis 1969). Males and females are colored alike, but females are consistently heavier than males (LaVal and LaVal 1980). Newly volant (able to fly) young are much darker and grayer than adults (Allen 1921). Other distinguishing characteristics include 34 teeth (compared with 38 teeth in eastern North American *Myotis spp*. for which it is sometimes confused), a calcar (i.e., spur of cartilage arising from the inner side of the ankle) with no keel, and only the anterior third of the uropatagium (i.e., the membrane that stretches between the legs) is furred (Barbour and Davis 1969). During the spring, summer, and fall (i.e., non-hibernating seasons), TCB primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees (Perry and Thill 2007; Thames 2020). In the southern and northern portions of the range, TCB will also roost in Spanish moss (*Tillandsia usneoides*) and *Usnea trichodea* lichen, respectively (Davis and Mumford 1962; Poissant 2009). In addition, TCB have been observed roosting during summer among pine needles (Perry and Thill 2007), eastern red cedar (*Juniperus virginiana*) (Thames 2020), within artificial roosts (e.g., barns, beneath porch roofs, bridges, concrete bunkers) (Jones and Pagels 1968, Barbour and Davis 1969).

TCB is one of the first species to enter hibernation each fall and among the last to emerge in spring (USAF 2020b). Hibernation sites are found deep within caves or mines in areas of relatively warm, stable temperatures. Once these bats find a winter hibernation site they prefer, they will often return to the same exact location year after year. TCBs join little brown bat and NLEB as one of the species most heavily impacted by white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent.

On September 13, 2022, the USFWS announced a proposal to list the tri-colored bat as endangered under the ESA. The proposed rule is currently in the public hearing/comment phase. The ESA requires the USFWS to publish one of the following by September 14, 2023: a final rule listing the tricolored bat; a notice withdrawing the proposed rule; or a notice that the USFWS requires an additional six months to either publish a final rule or withdraw the proposed rule (USFWS, 2022b).

3.6.2.4 State Listed Species

3.6.2.4.1 Bald Eagle

Prior to August 2007, this species was listed as federally threatened. Since delisting, the bald eagle continues to be protected under the Federal Bald and Golden Eagle Protection Act (16 U.S.C. 668a-d) and the MBTA (40 Stat. 755 as amended; 16 U.S.C. 703-112). The bald eagle also remains a state-listed species under the New Jersey 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. These federal and state laws prohibit taking of bald eagles.

A nesting pair of bald eagles was 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 successfully raised sixteen eaglets as of 2015. In the winter of 2017, the nest tree fell and the eagles have not been seen nesting in this area since that time. In 2018, a bald eagle nest was discovered at Lakehurst approximately 1,400 feet from the southwest end of the Maxfield airfield Runway 6. Due to the proximity of the nest to the runway and the potential for a BASH incident, the Natural Resources office obtained and executed a USFWS nest depredation permit to remove this nest by cutting down the host tree during the off-season (USAF 2020b). JB MDL continues to monitor for this species.

3.6.2.4.2 Barred Owl

The state threatened barred owl (*Strix varia*) is a large fluffy-looking owl with brown barring on the upper breast and brown streaking on the lower breast and belly. The round head lacks ear tufts and the eyes are dark brown. The diet of the barred owl consists predominantly of small mammals but may also include reptiles, amphibians, insects, or small birds (Liguori 2003). Barred owl occurs locally within large, unbroken tracts of mature cedar swamps, hardwood swamps, and lowlands dominated by pitch pine. It prefers secluded habitats and does not fare well with human disturbance.

In 2007, JB MDL performed a habitat assessment for barred owl at Dix to identify suitable habitat. Owl call-back surveys were completed in areas deemed suitable in 2007–2009. The survey at Dix identified 13 barred owls, including four sets of owls calling as a breeding pairs. The survey was conducted at Lakehurst in 2010. The survey results identified four owls present at Lakehurst, two of which called as a breeding pair. A singular calling owl was noted in a swamp just west of Lakehurst Towway 11, while the remaining owls were located on an adjacent off-base property. Surveys for barred owl are completed within areas identified as suitable habitat every 3 to 5 years.

3.6.2.4.3 Grassland Bird Species

Listed grassland bird species with documented occurrences at Dix and Lakehurst and/or those which have the potential to occur on site include grasshopper sparrow (*Ammodramus savannarum),* Eastern meadowlark (*Sturnella magna),* horned lark (*Eremophila alpestris*), upland sandpiper (*Bartramia longicauda*), and vesper sparrow *(Pooecetes graminus*). Upland sandpiper is listed by the state of New Jersey as endangered; grasshopper sparrow and horned lark are listed as threatened, while Eastern meadowlark and vesper sparrow are listed as species of special concern. Three grassland species (Eastern meadowlark, horned lark, and grasshopper sparrow) were recorded at Lakehurst during the 2018–2019 WHA Lakehurst airfield surveys and one additional grassland species (upland sandpiper) was noted as a general observation during management activities. There were no recorded observations of vesper sparrow.

In terms of body mass, upland sandpiper is the largest of the grassland birds, followed by Eastern meadowlark, horned lark, and grasshopper sparrow. The upland sandpiper is a brown shorebird with a thin neck, small head, long tail, and yellow legs and weighs approximately 6 ounces, while the eastern meadowlark is medium sized (3.6 ounces) with a mottled brown back, yellow eye stripe, and distinctive yellow throat. The horned lark is even smaller (1.1 ounce), about 7 to 8 inches in length, and has a brown back and pale belly. The adult male's yellow face is marked by a sweeping black stripe below the eyes and another bold black patch below the throat. The grasshopper sparrow has a stocky body, short legs, and feathers that are brown above with buff streaking. A small, secretive songbird, the grasshopper sparrow is more often heard than seen.

Grassland birds are heavily dependent on large open areas dominated by grasses and forbs as they rely on these grasslands for both nesting and feeding (USDA-WS, 2019). They are adaptable to disturbed grasslands that are common at places such as airports. They all have an omnivorous diet consisting of grasshoppers, insects, seeds, and grain which they forage from the ground. Grassland birds nest on the ground and prefer to reside in areas with perches and few shrubs. Horned lark prefer bare, dry ground with short, sparse vegetation; they avoid areas with grass more than a couple inches tall while grasshopper sparrow prefer short to medium height vegetation. Eastern meadowlarks favor dense grasses 10 to 20 inches tall while the larger, upland sandpipers utilize grasses ranging from 3 to 16 inches tall. Grassland species

may raise multiple broods each year. In fact, the horned lark in New Jersey may have up to three broods since they start to lay eggs in February. All four of the observed grassland species breed in New Jersey with Eastern meadowlarks and horned larks being year-round residents (USDA-WS 2019). The second largest population of grasshopper sparrow in the state is located within the Lakehurst portion of JB MDL (USAF 2020b).

A total of 2,452 individual birds (56 species) were noted at Lakehurst airfield over the course of the WHA airfield surveys (USDA-WS, 2019). Grassland birds (251) accounted for the highest observations (the number occasions that a particular species was recorded) and second-highest abundance (420) (referring to the total number of birds surveyed). Eastern meadowlarks encompassed 52 percent of the grassland bird's abundance (220 of 420 birds), followed by grasshopper sparrows with 40 percent (166 birds) and horned larks with eight percent (34 birds). With respect to the number of observations, Eastern meadowlark accounted for 50 percent of observations, grasshopper sparrow 42 percent, and horned lark 8 percent. These three species where most commonly seen as individuals or pairs, accounting for 88 percent of the observations. With the exception of one observation of ten meadowlarks, the remaining birds were observed in small groups of three to five. Even though Eastern meadowlarks and horned larks are year-round residents, no grassland birds were observed during surveys in December 2018 through February 2019. General observations of grassland birds during the WHA surveys resulted in sightings of Eastern meadowlarks, horned larks, and upland sandpipers. The upland sandpiper was recorded as a solo bird on three occasions in May and June 2019 (USDA-WS, 2019).

3.6.2.4.4 Snakes

The state threatened northern pine snake (*Pituophis m. melanoleucus*) and the state endangered timber rattlesnake (*Crotalus horridus*) and corn snake (*Elaphe g. gutatta*) have been documented as occurring at Dix and Lakehurst.

The northern pine snake is a long (48- to 100-inch) snake with a slightly pointed snout. Ground color is white, gray, or cream, marked with black or dark brown blotches. The blotches are less distinct at the front half of the snake and become more clearly delineated towards the tail end. They prefer pine-oak forest types growing on very infertile sandy soils, such as Lakehurst or Lakewood sands, and occur equally in disturbed and undisturbed sites. Small openings created by fires on these sites often create suitable den and nesting sites. In addition, these snakes are often found at road edges, railroad beds, field margins, and other open areas.

The corn snake (also known as the red rat snake) is a docile, long snake with a flat belly and flat sides. Ground color is variable, and can be orange, brown ,or gray. Orange, red, or brown blotches outlined in black run down the middle of the back, with smaller blotches on the sides. Some individuals may have stripes rather than blotches. The head is marked with a blotch shaped like a spear point, which splits towards the neck. The corn snake inhabits mature, upland pine-dominated forests that contain uprooted trees, stump holes, and rotten logs. Soils typically include sands and loams.

Timber rattlesnake is the only venomous reptile found on JB MDL. Timber rattlesnake colors and patterns are highly variable geographically. In New Jersey, two color morphs occur—yellow or black. An average of 24 dark brown or black body blotches, crossbands, or both are found from the neck to the base of the tail. Black morphs have a black head and may have much black color throughout, whereas yellow morphs have a yellow or light tan head color. Populations in southern New Jersey are typically found in pinelands habitats that consist primarily of pitch pine, short-leaf pine, scrub oak (*Quercus ilicifolia*), blackjack oak (*Q. marilandica*), and blueberry (*Vaccinium spp*.) Timber rattlesnakes usually den along streams in white cedar swamps.

All three species of snakes are ectothermic (dependent on external sources of body heat), active during the warmer months (April through October) and hibernate during the winter. They typically return to the same den every year (and often to the same crevice) to hibernate.

During a three-year study conducted in the 1990s, seven distinct northern pine snake nesting areas were identified at Lakehurst and over 300 northern pine snakes were captured and released. During surveys conducted in 2019–2020, northern pine snake, and corn snake were identified at both Lakehurst and Dix, including gravid females. A single occurrence of timber rattlesnake was documented in 2020 at Dix.

3.6.2.4.5 Pine Barrens Tree Frog

The state-threatened Pine Barrens tree frog (*Hyla andersonii*) is the only rare amphibian species known to occur at JB MDL (USAF 2020b). The Pine Barrens treefrog is tiny, between 1-½ to 2 inches in length. A purple stripe with a yellowish-white border extends from the snout through the eye down each side of the body. It is white below, with a vibrant orange patch beneath each hind leg that shows as a flash of color when the frog jumps. Its throat has a purplish tinge, which is particularly visible on the male.

In New Jersey, Pine Barrens tree frogs are found within lowland forested habitats that contain acidic woodland pools or other acidic, flooded wetlands in which it breeds, including pitch pine lowlands, pine oak, and oak pine stands, Atlantic white cedar swamps, red maple swamps and abandoned blueberry fields. Nocturnal call back surveys conducted at 14 sites within Lakehurst revealed positive results from the fire ponds, wetland stream corridors, and a mixed hardwood-Atlantic white cedar swamp (USAF 2020b). Several colonies of Pine Barrens tree frog were also identified at Dix during surveys conducted in 1996.

3.6.2.4.6 Bat Species of Special Concern

Big brown bat (*Eptesicus fuscus*), hoary bat (*Lasiurus cinereus*), and red bat (*Lasiurus borealis*) are listed by the state of New Jersey as Species of Special Concern. All occupy a wide geographic range, which includes the entire state of New Jersey. Fur color on big brown bat varies; their backs can range from light tan to dark brown, while their underbellies are generally light tan to olive in color. Their furless faces, ears, and wing membranes are black. Hoary bats are named for their distinctive long, soft, and thick “frosted” fur, which is gray-colored with white tips. Their underbelly fur is yellowish. Fur color of red bats ranges from yellowish red to a deep orange red, with female red bats tending to have a more frosted appearance and males being a darker hue. A distinctive feature of the red bat is its thickly furred tail-wing membrane, called the uropatagium. Red bats are capable of enduring temperatures of as low as 23 degrees Fahrenheit, in part because they can enclose themselves in this heavily furred membrane for insulation. Big brown and hoary bats are of similar size having wing spans ranging from 16 to 19 inches while red bats are much smaller. Male big brown bats are solitary as are hoary and red bats (Kopsco and Hall, 2014). Mist net surveys conducted in 2015 and 2018 confirmed a consistent presence of these bat species at JB MDL (USAF 2020b).

3.6.2.4.7 Lepidoptera

Biological inventories at JB MDL have included rare invertebrate surveys focusing on Lepidoptera, the Order which includes butterflies, skippers, and moths. The survey findings indicate that JB MDL has one of the three highest concentrations of globally rare Lepidoptera found anywhere in eastern North America north of the Florida peninsula (USAF 2020b).

The arroyos skipper (*Atrytone arogos*) is listed as endangered by the state of New Jersey. It ranges in length from 1.3 to 1.4 inches and look very similar to the abundant Delaware skipper (*Anatrytone logan*). Both species have light orange with black wing margins on the upper surface, but the margins are thicker on the arogos. The arogos also has a white fringe on the underside of its hindwing and an overall deeper orange color on the undersurface of the wings. In 1995, the arogos skipper was documented in the reed grass savannah within the Dix range impact area where grassland savannahs are created from repeated summer fires that occur from ordnance firings into this area. Dix has actively managed for this species since it was discovered in 1995.

The frosted elfin (*Callophrys irus*) is listed by the state of New Jersey as a threatened species. It is slightly larger than most other elfins that are similar in appearance. Adults range in size from 1 to 1.25 inches. The upper surfaces of the wings are a drab brown color. The back edge of the hindwing often has a white "frosting," for which this species is named. This species requires early successional stages of vegetation to survive consisting of dry clearings and open areas that are natural or of human origin, such as power line right-of-way, sand or gravel pits, roadsides, railways, and airports. Frosted elfin has the potential to occur on JB MDL due both to its habitat preference and the presence of host plants. Floristic surveys conducted in 2012 identified wild indigo (*Baptista tinctoria*) on the Dix area of JB MDL. In New Jersey, wild indigo is the major food and host plant of frosted elfin as larvae feed on the flowers and fruits and the adults feed on the nectar. Frosted elfin is closely associated with their host plants and are virtually never seen more than 60 feet from stands of wild indigo.

The silvered-bordered fritillary (*Bolaria selene myrina*) is listed as threatened by the state of New Jersey. Its wings are orange with black markings. This species reaches sizes of 1.6 to 2.75 inches. It can be distinguished from other closely related species by the presence of silver spots on the underside of the hindwing. Surveys conducted in 1995 identified this species at Dix and the NJ NHP has indicated a potential for occurrence at Lakehurst.

Leonard's skipper (*Hesperia leonardus*) is listed as a species of special concern in the state of New Jersey. It is considerably small with a wingspan of approximately one to 1.25 inches. Their upper side is red-orange in color, lined with wide black borders. The underside of the hindwing is brick red with a band of white spots. Although this species has not been documented at Lakehurst or Dix, the NJDEP has identified that the project areas comprised of grasslands have the potential to provide critical breeding habitat for this species.

The dotted skipper's (*Hesperia attalus slossonae*) is listed as a species of special concern in the state of New Jersey. Its most distinctive characteristics are often absent; they are considered to have variable appearances. Overall, the dotted skipper is a large species with a prominent pointed forewing. Males have a dull brown and orange upper side with dark borders. Females have a dark brown upper side with pale spots. Their underside is usually dull orange and can be with or without dull spots. JB MDL has recorded an occurrence of dotted skipper at Lakehurst and the NJDEP has identified that the project areas comprised of grasslands have the potential to provide critical breeding habitat for this species.

3.6.2.4.8 Juniper Leaf

Juniper-leaf or Rustweed (*Polypremum procumbens*) is a low, spreading plant variously reported as a taprooted annual or a short-lived perennial, found throughout open disturbed areas in the eastern and central United States, the West Indies, Mexico, Central America, and South America. Juniper-leaf may flower from late May until October, producing fruit from August through October (Weakley 2015). In the fall, the plants turn reddish-brown, the source of the common name "Rustweed" (Keener et al. 2021). In New Jersey, Juniper leaf is critically

imperiled (S1) indicating that the species is very rare in the state, with an estimated 6 to 20 occurrences. Additional regional status codes assigned to this species signify that the species is eligible for protection under the jurisdiction of the NJPC.

The New Jersey NHP has reported a single record for this species, indicating in 1949 that juniper-leaf was observed along South River, approximately one mile south of Cookstown, in proximity to the Dix East mowing parcels. However, no recent sightings have been documented at JB MDL.

3.6.3 Environmental Consequences

3.6.3.1 Alternative 1 – Full Implementation of INRMP

Minor, short- and long-term effects to vegetation would be expected to result from implementation of Alternative 1. However, the main adverse effects to vegetation would be temporary. The proposed annual mowing of grassland fields at Dix and Lakehurst (Project 8.1.1.5.2) would involve a rotation of mowing and conducting a controlled burning program one time per year (each) for the five-year INRMP implementation period. The mechanical thinning project at Lakehurst (320 acres) would occur only once during the INRMP implementation period with the root systems left in place to reduce the potential for erosion. The removal of smaller, diseased, and less desirable trees would enhance the health of these forested tracts and improve habitat for listed species. The vegetation management project at Lakehurst airfield to minimize BASH risk would result in the establishment of a monoculture of warm season grasses which would, in turn, improve habitat conditions for many grassland bird species.

Short-term minor adverse effects to wildlife are expected to occur from implementation of Alternative 1. Short-term minor impacts would result from noise and the presence of workers during annual mowing at Dix and Lakehurst, mechanical tree thinning, and vegetation management activities proposed at Lakehurst airfield. These activities may cause temporary displacement of wildlife that utilize these areas.

3.6.3.2 Threatened and Endangered Species

3.6.3.2.1 Federally Listed Species

Impacts to federally listed plant species are unlikely to occur under Alternative 1. Annual surveys are conducted for American chaffseed, Knieskern's beaked-rush, and swamp pink in appropriate habitats on JB MDL as part of the INRMP (JB MDL 2021a). American chaffseed has not been observed anywhere on JB MDL (USAF, 2020b). Swamp pink, which cannot survive in the open sun and is generally found in shady, forested wetland areas, has been documented within the forested buffer along Gaunt's Brook at the Dix ranges but has never been found at Lakehurst. Although specimens of Knieskern's beaked rush have been recorded as occurring in proximity to Area A (proposed for mechanical tree thinning) at Lakehurst, this species is intolerant of shade and would not occur within forested areas proposed for thinning. Knieskern's beaked-rush and swamp pink are typically found in wetlands and no work is proposed within streams or wetlands where this plant would occur. The appropriate buffers will be established around streams and wetlands prior to starting work to protect wetland/water dependent species.

Although suitable habitat for bog turtle exists on all three areas of JB MDL, the last confirmed sightings of this species were almost 30 years ago (1993 and 1988). The sightings occurred near the southeastern corner of Lakehurst where no work is proposed. Typically, adverse impacts to this species result from substantial changes to surface water or groundwater, including stormwater (USFES, 2018). Since there will be no modifications to water resources under Alternative 1, no impacts to bog turtle would be expected.

Vegetative management activities, such as mechanical thinning proposed at Lakehurst, could negatively impact bat species that use the trees for summer roost sites. If necessary, the tree thinning areas would be surveyed for roosting bats prior to mobilization. If roosting bats are found, an appropriate buffer would be established around the roost site to protect bat species. No project work would be allowed within the buffer until after the applicable season has ended or the species has vacated the area as determined by a qualified biologist. To avoid impacts to bats, JB MDL will work with the USFWS and NJDEP to establish seasonal timing restrictions (typically April 1 to September 30), and these timing restrictions would be followed to protect all bat species during vegetation management activities. Therefore, no direct adverse impacts to bats would occur from implementation of Alternative 1.

3.6.3.3 State-Listed Species

Impacts to bald eagle would not occur under Alternative 1 because no nest sites are located near the project areas. If a new unidentified bald eagle nest site is found, JB MDL would create an appropriate buffer area to limit activities to reduce disturbance to eagles. Any necessary vegetation management activities would be delayed until the appropriate season so not to disturb breeding/nesting eagles or eaglets. JB MDL would also monitor eagle activity and conduct regular nest site visits.

The proposed annual mowing of grassland fields at Dix and Lakehurst (Project 8.1.1.5.2) and the vegetation management activities at Lakehurst airfield (Project 8.10.1.2.5) would not adversely affect barred owl, since these areas do not contain suitable habitat. However, mechanical thinning of forested areas proposed under (Project 8.7.2.1.1) may temporarily displace barred owl and eliminate nesting cavities or render sites temporarily unsuitable for breeding. To avoid damaging nesting cavities, natural resource personnel would conduct surveys through all tree thinning areas to identify potential nesting cavities. Such trees will be marked with survey tape to alert workers to avoid these trees. Following mechanical thinning, barred owl may benefit from having an open understory through which it can fly and hunt.

Pine barrens tree frog has been documented at both Dix and Lakehurst, and vernal pool breeding has been established at Lakehurst. Since this species is only found in habitats where standing water is present and no work would be conducted in such areas, impacts to this species are not expected.

Northern pine snake, corn snake, and timber rattlesnake have been documented as occurring at Dix and Lakehurst, and there is documented hibernaculum for northern pine snake at Lakehurst. Due to the presence of these species, JB MDL would follow NJDEP's Endangered and Nongame Species Program published guidance entitled "Recommended Forestry Timing & Activity Restrictions to Minimize Harm to Listed Snake Species," which details mitigation measures necessary to ensure protection of these species. When working within occupied habitat for snakes, JB MDL would enlist a qualified biologist to monitor vegetation management activities. If listed snake species are discovered, construction personnel would stop work and the JB MDL Natural Resources Manager would be contacted for attempted capture and relocation to another suitable habitat. Temporary vegetation management would not result in permanent loss of habitat, it is expected that snake species would return to the area following the proposed activities. Impacts to herpetofauna will be further reduced by enacting seasonal controls, enforcing speed limits, and operating only on established roads when possible.

During vegetation management activities, there is potential to disrupt and harm grassland birds during the nesting season. However, these impacts would have minor adverse impacts by minimizing the proposed activities to the extent possible, while still complying with AFI 91-212. Per AFI 91-212 31 May 2018 3.2.1.2 "maintain vegetative cover at the above prescribed height

500 feet beyond the Aircraft Movement Area (AMA) boundary where able." To obtain the recommended height of 7- to 14-inch grass in the 500 feet AMA, multiple strategies would be employed, such as application of herbicides and adjustments to mowing schedules. Maintaining grass height within 500 feet of the AMA at a height between 7 and 14 inches would comply with AFI 212 while also complying with AFMAN 32-7003 20 (April 2020) and the JB MDL INRMP. Areas outside of 500 feet AMA would remain restricted during the grassland bird breeding period of between April 15 and July 31.

JB MDL routinely conducts surveys for Lepidoptera species and their host plants. Although JB MDL supports numerous Lepidoptera species, no suitable habitats occur within or near the sites proposed for vegetation management. Therefore, no adverse impacts to Lepidoptera species are expected. The USFWS recommends a seasonal restriction from April 1 to September 30 for tree or shrub trimming and/or removal in order to protect migratory birds protected under the Migratory Bird Treaty Act. JB MDL would avoid mechanical thinning between April 1 and September 30 in accordance with federal direction.

3.6.3.4 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2, JB MDL would implement only select ongoing and new INRMP projects involving data collection, planning activities, meetings, and administrative actions. Active restoration projects and new vegetative management activities would not be implemented under Alternative 2. Trees would not be subject to removal or thinning and there would be no change in the current mowing schedule. Safety issues related to BASH would remain and JB MDL would remain out of compliance with AFI 91 -212.

3.6.3.4.1 No Action Alternative

The No Action Alternative would result in the continued vegetation management program, including mowing and periodic prescribed burning activities. There would be no alteration to biological resources; therefore, the No Action Alternative would not result in any short- or long-term impacts.

3.7 Land Use

Land use classifications characterize the natural and/or human activities that occur at, or are planned for, a specific location. Natural land uses include open grassland, forest, open water, and other undeveloped areas. Developed land uses generally are classified as residential, commercial, industrial, agricultural, and other types of development. Comprehensive plans, policies, and zoning requirements regulate the type and extent of local land uses allowable in specific areas and often protect sensitive resources; however, federal actions are generally not required to comply with local zoning regulations. Land use at JB MD is primarily guided by the *Installation Development Plan* to ensure safe, compatible development (JB MDL 2015).

3.7.1 Regulatory Setting

In 1979, the state of New Jersey passed the Pinelands Protection Act (PPA), which defined various protection and management zones within the Pinelands National Reserve (NJPC, 2022). The Pinelands National Reserve consists of approximately 1.1 million acres in southern New Jersey, managed by the NJPC. The Pinelands National Reserve includes portions of seven counties, including Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, and Ocean. The entirety of JB MDL is located within the Pinelands National Reserve (PPA, 2022).

The Pinelands Comprehensive Management Plan (CMP) was prepared in accordance with the 1979 New Jersey PPA (NJPC, 2022). The CMP regulations were prepared to manage

development within the Pinelands while protecting the area's significant natural, agricultural, cultural, recreational, and historic resources. While local governments are responsible for implementing the CMP, the PPA includes a procedure for review of county and municipal master plans and land use ordinances. The Pinelands Commission's Office of Land Use and Technology Programs is responsible for reviewing and certifying all municipal zoning and land use ordinances and master plans for consistency with the CMP. Generally, while the local governments can create their own land use and zoning plan, the CMP establishes minimum standards that the municipal and county plans must conform to for land use management (NJPC, 2022).

3.7.2 Affected Environment

At Dix, the parcels proposed for annual mowing situated southwest of McGuire Airfield (Dix West parcels) are within the municipal boundary of Pemberton Township, while parcels proposed for mowing within the Dix East project area are in New Hanover Township. According to NJDEP Land Use mapping, the Dix West parcels are mapped as "old fields with less than 25 percent cover by brush", with the northeastern most parcel mapped as "other urban/built up land." The majority of the Dix East parcels are mapped as undeveloped upland right-of-way. The 34 acres of existing undeveloped grasslands at Dix are surrounded by plantation forests and forested/shrub-scrub wetland communities. Other than paved and unpaved access roads, there is no development within 500 feet, the ROI for Land Use.

Since the majority of new projects proposed under the updated INRMP are scattered throughout the Lakehurst section of JB MDL, the ROI for Land Use includes Lakehurst as a whole.

The missions of the numerous tenants assigned to the Lakehurst section of JB MDL are varied. Naval Air Systems Command is the largest tenant on the Lakehurst section of JB MDL and its primary mission assures that fixed and vertical wing aircraft operate safely and effectively from aircraft carriers, other air capable ships, and expeditionary airfields worldwide. The Naval Air Systems Command provides the facilities and services necessary to permit fixed and rotary wing aircraft to operate safely and effectively from ships at sea and from austere expeditionary airfields. Naval Air Systems Command personnel design, develop prototypes, perform testing, and manage contracting to provide items such as catapults, arresting gear, visual landing aids, flight deck marking/lighting systems, aircraft and weapons handling equipment, aircraft servicing and maintenance equipment, unique avionics testing equipment, aircraft engine testing equipment, and shipboard aircraft fire trucks (JB MDL 2021a).

Lakehurst falls within the boundaries of two municipalities. Approximately 75 percent of Lakehurst is in Jackson Township while the southern 25 percent of Lakehurst is situated within Manchester Township. Proposed Projects 8.7.2.1.1 (Mechanical Tree Thinning), Project 8.10.1.2.5 (Lakehurst Airfield Mowing and Clearing), and the majority of Project 8.1.1.5.2 (Annual Mowing) are situated within the municipal boundary of Jackson Township. Two of the Annual Mowing sites proposed under Project 8.1.1.5.2 (57.42 acres) are within Manchester Township. According to NJDEP Land Use mapping, the majority of projects proposed at Lakehurst would occur on land mapped as "other urban or built-up land," the exception being the areas proposed for mechanical thinning which are mapped as mixed and coniferous forested uplands and wetlands.

According to Jackson and Manchester Zoning Maps, Lakehurst is zoned as a Military Institution (RVV, 2017). Permitted uses include those associated with the function of the military installation or other essential public service with certain exceptions pertaining to solid and hazardous waste facilities and infrastructure (Jackson Township, 2022). JB MDL is also subject

to the New Jersey Pinelands CMP and is mapped as “federal” or “military installation” area, within the joint base boundary (DoD, 2009).

3.7.3 Environmental Consequences

The threshold level for significant impacts to land use is defined as activities that displace a surrounding existing use or alter the suitability of the surrounding area for its current, designated, or formally planned use. Significance determinations are based on the level of land use sensitivity in areas affected by a proposed action and compatibility of a proposed action with existing conditions. For example, constructing an industrial facility within a residential area could result in a significant impact to land use.

3.7.3.1 Alternative 1 – Full Implementation of INRMP

The actions described under Alternative 1 are limited to the unimproved areas of the installation; there would be no land use changes on or off the installation resulting from the proposed activities. No impacts to existing facilities, airspace, and/or airfield operations would occur. Furthermore, implementation of Alternative 1 would not alter or impact the project areas or adjacent areas in a way that would preclude future uses.

Implementation of Alternative 1 would somewhat alter land within the PPA. However, the vegetative management activities proposed would substantively meet the environmental compliance standards of the Pinelands CMP. Therefore, the actions are expected to result in less than significant adverse impacts to the environmental resources of the Pinelands Area.

3.7.3.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Implementation of Alternative 2 would not result in a change in current land use conditions. No impacts to existing facilities, airspace, and or airfield operations would occur. Therefore, no impacts to land use would occur.

3.7.3.3 No Action Alternative

Implementation of the No Action Alternative would not result in a change in current conditions. Therefore, no impacts to land use would occur.

3.8 Hazardous Materials

3.8.1 Regulatory Setting

Hazardous materials include any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. Hazardous materials are defined and regulated in the United States primarily by laws and regulations administered by the USEPA, OSHA, the U.S. Department of Transportation, and the U.S. Nuclear Regulatory Commission. Each has its own definition of a hazardous material.

The Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA); the Resource Conservation and Recovery Act (RCRA); AR 200-1; and 32 CFR 651 are the primary environmental regulations that govern JB MDL hazardous material use, handling, and remediation at military installations (JB MDL 2021a). In general terms:

- CERCLA – Regulates the cleanup of releases or threats of releases of hazardous substances, pollutants, and contaminants.
- RCRA – Regulates management of hazardous waste, including storage, handling, transportation, treatment, and disposal.

- AR 200-1 – *Environmental Protection and Enhancement* defines Army policy and procedures for managing solid and hazardous waste, including resource recovery, recycling, waste reduction, and training programs.
- 32 CFR 651 – *Environmental Analysis of Army Actions* (AR 200-2) defines Army policy and responsibilities for early integration of environmental considerations into planning and decision-making.

3.8.2 Affected Environment

JB MDL has developed multiple plans to address hazardous materials, including pollution prevention and pest management. JB MDL has also established an Environmental Restoration Program (ERP) in accordance with CERCLA and its amendment, the Superfund Amendments and Reauthorization Act (SARA). There are two categories of sites under the ERP at JB MDL: 1) Installation restoration program (IRP) sites; and 2) Military Munitions Response Program (MMRP) sites. These programs are described in further detail in the below sections.

Since implementation of the INRMP does not involve the alteration of any structures and/or construction, asbestos, lead based paint, and radon are not considered in this EA.

3.8.3 Spill Prevention, Control, and Countermeasures Plan

Integrated Contingency Plans (ICPs) for Oil Spill Prevention and Response at Dix and Lakehurst have been prepared in accordance with federal, state, and Air Force regulations. These ICPs provide all areas of the installation with a response management system that can address a worst-case spill emergency. The ICPs also identify the locations of hazardous materials/waste storage areas, fuel tank farms, secondary containment areas, material loading and unloading areas, as well as the type of material stored at each area. In addition, a spill log is also kept by the Environmental Department in accordance with NJAC 7:26 – Solid & Hazardous Waste and 40 CFR 112.

JB MDL operates oil handling and storage facilities that have the potential for releases on land and water. The ICPs serve as the operational document designed to meet the combined regulatory requirements for a USEPA Facility Response Plan and a USEPA Spill Prevention Control and Countermeasure Plan. The ICPs also address the emergency planning, notification, and response actions directed by the RCRA, the CERCLA, Emergency Planning and Community Right-to-Know Act (EPCRA), and OSHA.

JB MDL also possesses a Discharge Prevention, Containment, Countermeasures, and Discharge Cleanup Removal (DPCC) Plan, which defines procedures for inspecting, testing, and maintenance of regulated containers at the JB MDL. Further, the DPCC Plan contains information regarding emergency response actions. The DPCC Plan also identifies the Spill Response Coordinator in the event that a spill occurs within the boundaries of the JB MDL.

3.8.3.1 Integrated Pest Management Plan

JB MDL McGuire maintains an Integrated Pest Management Plan (IPMP) that addresses pesticide management including procurement, storage, application, and disposal of all pesticide products. This IPMP is prepared under the direction of DoD Instruction number 4150.07, DoD Pest Management Program, 23 May 2013 and AFI 32-1053, Integrated Pest Management Program, 6 August 2019 (USAF 2019a). The IPMP addresses management of public health pests, pests found in and around structures, stored product pests, as well as noxious and invasive plants. Pesticide use on the airfield in the vicinity of the runways and taxiways includes annual application of an insecticide, Sevin® SL (active ingredient: carbaryl), to control Japanese beetles and application of Roundup® (active ingredient: glyphosate) to control weeds. Various

herbicides, including Weed B Gon® (active ingredients: quinclorac; 2,4-D; and dicamba) and Roundup® and various insecticides, including Sevin® SL and Tempo® (active ingredient: beta-cyfluthrin), are used to control weeds and insects on an as needed basis (JBMDL 2017). Pesticides are applied according to federal, state, and local regulations.

3.8.3.2 Environmental Restoration Program

At JB MDL, the ERP manages environmental restoration under two distinct programs, the IRP and the MMRP. Under the IRP, environmental remediation activities at JB MDL are being managed under CERCLA, the National Oil and Hazardous Substance Pollution Contingency Plan (NCP); and the New Jersey State Led Petroleum Program. The IRP includes the CERCLA National Priority List (NPL) sites, CERCLA non-NPL sites, and petroleum sites. The USEPA acts as lead regulatory agency for NPL sites, and NJDEP acts as lead regulatory agency for non-NPL and petroleum sites. NPL sites at JB MDL include former old landfills, fire training areas, bulk fuel storage areas, fuel hydrant systems, and maintenance/storage areas. CERCLA non-NPL sites include, but are not limited to, the McGuire Boeing Michigan Aeronautical Research Center (BOMARC) Missile Facility, the Dix Magazine-1 Area, and the recently delisted Dix Sanitary Landfill. State led petroleum sites include petroleum releases associated with past spills, out-of-service underground storage tanks (USTs), oil-water separators, or fuel lines. These petroleum sites are managed in accordance with RCRA and N.J.A.C. 7:26E et seq. (Arcadis, 2021)

The MMRP was established for inactive ranges in 2002 and follows the CERCLA process. The program was implemented to address munitions and explosives of concern (MEC) on current and former military installations. At McGuire and Lakehurst, the USEPA is the lead agency for the MMRP sites; at Dix, the NJDEP is the lead agency for the MMRP sites.

3.8.3.2.1 Dix

JB MDL-Dix has 10 active IRP sites and two active MMRP sites (Arcadis, 2021); however, none of these sites occur in proximity to the areas proposed for mowing at Dix. The nearest IRP site to the Dix West proposed mowing areas is a 110-acre Sanitary Landfill (LF010), which has been capped and is fenced. The IRP site closest to the Dix East proposed mowing areas is LF020, which is more than 1,000 feet away. The closest MEC site is over a half-mile northeast of the Dix West proposed mowing areas and there are no MEC sites within several miles of the Dix East proposed mowing areas.

3.8.3.2.2 Lakehurst

Military activities on the Lakehurst section of JB MDL date to 1918, when the area was used as a training camp for World War I troops and as a munitions proving ground. As a former munitions proving ground and practice bombing range, a large portion of JB MDL, including Lakehurst, has the potential to be contaminated with live unexploded ordnance (UXO) (JB MDL 2021a).

The southwestern section of Lakehurst (approximately 2,900 acres) is mapped as a potential MEC area where caution should be used prior to disturbance. This would include the proposed annual mowing sites situated near the southwestern corner of Lakehurst; tree thinning areas C, D, and F; and the southern section of Lakehurst Airfield.

The northern portion of Lakehurst, which includes the northern half of Lakehurst airfield, tree thinning areas A and B, and the proposed annual mowing site north of the test runway are situated within a Known MEC Area where action is required prior to ground disturbance; specifically, UXO/MEC sweep requirements and anomaly avoidance.

3.8.4 Environmental Consequences

The threshold level of significance for impacts resulting from hazardous materials includes a release of hazardous materials or a violation of local, state, or federal hazardous materials regulations.

3.8.4.1 Alternative 1 – Full Implementation of INRMP

Vegetation management activities proposed under Alternative 1 would not involve ground disturbance, i.e., excavation, trenching, grading, clearing, grubbing, or any work that would require a dig permit. Thus, use of a certified UXO contractor to perform formal UXO/MEC sweeps is not required for the proposed activities. However, to ensure the safety of personnel, all areas subject to mowing/maintenance would be visually scanned before any new vegetative management activities are conducted. In addition, maintenance workers would be trained in the proper methods of UXO recognition and safety protocols prior to starting work.

Operation and maintenance of equipment necessary to manage vegetation at JB MDL requires the use of fuel, oil, and other potentially hazardous materials. The base operations support contractor is required to comply with applicable state and federal regulations for the storage, use, and disposal of hazardous materials. In the event of a hazardous spill, immediate action would be taken to contain and clean up the spill in accordance with the appropriate regulations. NJAC 7:1E-1.1 et seq., Discharges of Petroleum and Other Hazardous Substances, must be followed in the event of a reportable spill. Thus, direct or indirect impacts due to hazardous waste from routine mowing activities, regardless of frequency and location, are not anticipated.

3.8.4.2 Alternative 2 – Partial Implementation of INRMP (Maintenance Projects Only)

Under Alternative 2 only maintenance projects would be implemented, no active restoration or new vegetation management projects would be implemented. There would be no alteration to ERP sites; therefore, Alternative 2 would not result in any short- or long-term impacts relating to Hazardous Materials.

3.8.4.3 No Action Alternative

Implementation of the No Action Alternative would not result in a change in current conditions; only those activities outlined in the 2015 INMRP would continue to occur. Therefore, no impacts to hazardous materials and/or ERP sites would occur.

4.0 REASONABLY FORESEEABLE ACTIONS AND CUMULATIVE IMPACTS

According to the CEQ in 40 CFR Section 1508.7, cumulative impacts are defined as an effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place locally or regionally over a period of time.

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time. Actions overlapping with or in proximity to the proposed action have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts.

The past, present, and reasonably foreseeable projects, identified in **Table 4:1** below, make up the cumulative impact scenario for the Proposed Action and Alternatives. The cumulative impacts scenario is then added to each alternative's impacts on the individual resource areas analyzed in **Sections 3.2** through **3.8** to determine cumulative impacts. Future actions which are not reasonably foreseeable (those which would occur after the 5-year INMRP implementation period) would be evaluated under separate NEPA documentation, if required, by the appropriate federal agency.

Table 4:1. Past, Present, and Reasonably Foreseeable Future Actions

	Project Name and Location	FY Planned	Impacted Area (ft2)	Description of Action
1	Demolish and Construct Lakehurst Air Traffic Control Tower (Lakehurst airfield east of runway intersection)	Anticipated FY24-28	6,495-9,200 sq. ft.	The current facility is over 50 years old and is deteriorated and unsafe. The project will include the demolition of the old facility and the construction of new facility. The project will include multiple stories and a laydown yard.
2	Construct New 144-Bed Dormitory (McGuire Cantonment)	Anticipated FY24-28	approx. 54,000 sq. ft.	The installation requires 810 dormitory rooms, but only has 692 in inventory. The project involves the construction of a new dormitory consisting of concrete foundation, slab-on-grade, steel-framed with brick veneer, elevated concrete floor slabs, metal joist hip roof structure with standing seam metal roof.
3	Installation of Aerators in Ponds (JB MDL property)	Anticipated FY25	approx. 40,000 sq. ft	The project would include the addition of solar powered aerators in ponds on the base consisting of a mast holding a solar panel, an aerator, and a weighted hose leading to the aeration head installed in the middle of the pond.
4	Demolish and Construct Well Facilities (Dix Cantonment)	Anticipated FY24-25	Well #5: approx. 1,700 sq. ft. Well #6: approx. 1,705 sq. ft	Wells 5 and 6, are failing and water treatment is not adequate to support the mission. The project will include the demolition of the old facilities and the construction of the new facility (see row 11).
5	Commercial Gate Security Improvements (Lakehurst Area)	Anticipated FY24	approx. 130,000 sq. ft.	This project involves the renovation of the existing main gate as it does not meet security requirements. The proposed project includes construction of a new guardhouse, new configuration of driving lanes, and the demolition of the old guardhouse and driving lanes.
6	Remove Berms South of McGuire Runways	Anticipated FY24	approx. 1,647 sq. ft.	The proposed project involves the removal of existing berms located in cranberry bogs which attract waterfowl species that present a hazard to airfield safety. The proposed project would include draining the ponds and restoring the native grasslands that existed before the cranberry bogs. At least six acres of native grasses would be created and invasive Phragmites stands will be eliminated. A wetland delineation will be required in the project footprint.

	Project Name and Location	FY Planned	Impacted Area (ft2)	Description of Action
7	Addition to Combat Arms Training and Maintenance (CATM) Facility (Next to tarmac in McGuire Area)	Anticipated FY27	approx. 900 sq. ft.	The proposed project includes constructing an addition an existing warehouse located next to the tarmac. The addition will consist of reinforced concrete slab on grade, masonry exterior walls with brick cladding, gable roof; interior construction of partition walls (non-load bearing) power, lighting, HVAC, and communications wiring.
8	Installation of a Septic System (Dix Area)	Anticipated FY27	approx. 500 sq. ft.	The proposed project is for the installation of a septic system at the hunter's shack within the Army Support Activity (ASA) Ranges. The building currently has no sewer hook-up.

As explained in **Section 3.1**, full implementation of the INRMP under Alternative 1 is expected to have negligible adverse impacts to Noise; Infrastructure, Utilities, and Transportation; Public Health and Safety; Aesthetics; as well as Socioeconomics and Environmental Justice. In addition, it was determined during the NEPA process that there would be no direct or indirect effects to land use, cultural, or earth resources resulting from the Proposed Action. Thus, there would be no increased adverse impacts to these resource categories as a result of full implementation of the INMRP when combined with past, present, and reasonably foreseeable planned actions. The same holds true under Alternative 2 since only ongoing projects and administrative, data collection, and planning actions would occur.

4.1 Air Quality

Short-term, negligible, adverse cumulative impacts on air quality are expected to occur. Emissions of criteria pollutants would be directly produced from the increased use of machinery (i.e., mowers, chainsaws, brush mower, drum chopper) from Alternative 1 and present and reasonably foreseeable future projects. However, these emissions would be temporary, in most cases occurring only once per year. Construction for the projects listed in **Table 4:1** would be staggered, and most projects would not occur in the same general location or during the time that vegetative management would occur. Best Management Practices (BMPs) and environmental control measures would be implemented to minimize impacts on air quality from Alternative 1 and other present and reasonably foreseeable future projects.

Long-term, negligible, adverse cumulative impacts on air quality would occur as a result of Project 2 (Construct New Dormitory) from heating the new building space and the slight increase in automobile traffic from the additional residents. However, these air emissions, when combined with the temporary increases from Alternative 1, would not appreciably degrade air quality within Burlington or Ocean Counties. Therefore, Alternative 1, when combined with other past, present, and reasonably foreseeable future projects, would not result in significant cumulative impacts on air quality at JB MDL or regionally.

4.2 Water Resources

As explained in Section 3.3, no earth disturbance would occur under Alternative 1 and direct impacts to water resources resulting from Alternative 1 would be minimized through the establishment of protective buffers. Vegetation would be removed by cutting and grinding stumps rather than grubbing to ensure that existing root systems would remain intact to stabilize the surrounding soil, thus preventing the discharge of sediment into surface waters. Although vegetative management activities may occur within the floodplain, these activities would not result in the placement of fill nor changes to the surface elevation of any areas within the floodplain. Thus, vegetative management activities proposed under Alternative 1 would not directly impact water resources.

Over half of cumulative impact projects including Project 2 (Construct New Dormitory), Project 3 (Install New Aerators in Ponds), Project 4 (Demolish and Construct Well Facilities), Project 7 (Addition to Combat Arms Training and Maintenance Facility), and Project 8 (Installation of Septic System) are geographically remote from the proposed projects to be implemented under Alternative 1. Therefore, these projects would not be expected to result in adverse cumulative impacts when combined with the Proposed Action under any alternative. For the remaining cumulative impact projects, temporary earth disturbance impacts and potential for sedimentation during construction would be minimized by implementation of the appropriate soil erosion and sediment control measures in accordance with the New Jersey Soil Erosion and Sediment Control Act (N.J.S.A. 4:24-39 et seq). Provided that stormwater management and soil erosion

protection measures are implemented, Alternative 1 would result in less-than-significant cumulative impacts to water resources.

4.3 Biological Resources

Implementation of Alternative 1 has the potential for short-term, minor, adverse effects, and long-term, minor, adverse effects on vegetation and wildlife. However, improvements to plant communities and the health of wildlife populations would be cumulative with other efforts on state and federal lands surrounding JB MDL. The majority of cumulative impact projects would be constructed on previously disturbed land adjacent to existing buildings and would not impact biological resources. Compliance with regulations and implementation of all required measures would ensure that impacts to biological resources are avoided or minimized to the maximum extent possible.

4.4 Hazardous Materials and Wastes

Operation and maintenance of equipment necessary to manage vegetation at JB MDL would require the use of fuel, oil, and other potentially hazardous materials. Some of these materials would also be used for construction of the projects listed in **Table 4:1**, resulting in the potential for short-term, minor, adverse cumulative impacts. However, all hazardous materials, petroleum products, and hazardous wastes supporting the proposed activities would be contained and stored appropriately in accordance with applicable regulations to minimize the potential for releases. JB MDL's ICP for Oil Spill Prevention and Response as well as DPCC plans are in place in the event of a spill or release. Furthermore, the Proposed Action under Alternative 1 and the projects identified in **Table 4:1** would not impact existing ERP sites. Therefore, no significant cumulative adverse impacts from hazardous materials and wastes would occur.

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APPENDICES

Appendix A: Interagency and Intergovernmental Coordination for Environmental Planning - Letters and Responses

Interagency and Intergovernmental Coordination for Environmental Planning Letters Mailing List

Federal and Regional Agencies

United States Fish and Wildlife Service
New Jersey Field Office, Ecological Services
4 East Jimmie Leeds Road, Unit 4
Galloway, NJ 08205
Attn: Mr. Ron Popowski, Supervisor, Conservation Planning Assistance and Endangered Species Program

United States Environmental Protection Agency
Environmental Review Section
Chief of Environmental Review
EPA Region 2
290 Broadway
New York, NY 10007-1866

State and Local Agencies

New Jersey Department of Environmental Protection
Division of Fish, Game, and Wildlife
Endangered and Nongame Species Program
Mail Code 501-03
P.O. Box 420
Trenton, NJ 08625-0420

New Jersey Department of Environmental Protection
Office of Permit Coordination and Environmental Review
401 East State Street
Mail Code 401-07J
P.O. Box 420
Trenton, NJ 08625
Attn: Ms. Megan Brunatti, Supervisor of Environmental Review

New Jersey Department of Environmental Protection
Historic Preservation Office
Mail Code 501-04B
P.O. Box 420
Trenton, NJ 08625-0420
Attn: Ms. Katherine Marcopul, Administer, State Historic Preservation Office

New Jersey Department of State
Historical Commission
225 West State Street
P.O. Box 305
Trenton, NJ 08625
Attn: Ms. Sara Cureton, Executive Director

New Jersey Pinelands Commission
P.O. Box 359
15 Springfield Road
New Lisbon, NJ 08064
Attn: Ms. Susan Grogan, Acting Executive Director

Manchester Township Environmental Commission
1 Colonial Drive
Manchester, NJ 08759

Ocean County Soil and Water Conservation District

714 Lacey Road
Forked River, NJ 08731
Attn: Christine Raabe, District Director

Ocean County Department of Planning
129 Hooper Avenue
P.O. Box 2191
Toms River, NJ 08754
Attn: Mr. Anthony Agliata, Planning Director

Planning Board of Burlington County
Engineering Complex
1900 Briggs Road
Mt. Laurel, NJ 08054

Burlington County Soil Conservation District
1971 Jacksonville-Jobstown Road
Columbus, NJ 08022

Federally Recognized Native American Tribal Organizations

Erin Paden, Director of Cultural Resources & Section 106

Delaware Nation
PO Box 825
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OCEAN COUNTY PLANNING BOARD
P O Box 2191
Toms River, New Jersey 08754-2191
Telephone (732) 929-2054
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March 24, 2022

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

Re: DOPAA Environmental Assessment 2020 INRMP

Dear Ms. Brunson,

Thank you for your letter and attached DOPAA for EA evaluating the potential environmental impacts associated with the implementation of the updated 2020 INRMP. The County is actively engaged in matters concerning the Joint Base and supporting its missions.

The County fully supports the integration of forestry, fish and wildlife and land management projects on the Joint Base. Our continued effort to preserve open space around the base complement many of the resource management goals outlined in the DOPAA including outdoor recreation, water resource, wetlands, ground maintenance and wildland fire.

Based on our initial review of the proposed action, we believe that these projects will be beneficial to the natural resources and quality of life on the Base, while having minimal impacts on the environment. If there is anything we can do to assist with this project, please contact me at (732) 929-2054.

Sincerely,

Mark A. C. Villinger
Supervising Planner

MVC/das

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

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

General Information: Info@pinelands.nj.gov
Application Specific Information: AppInfo@pinelands.nj.gov

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

March 24, 2022

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

Re: Application # 1991-0820.124
Joint Base McGuire-Dix-Lakehurst

Dear Ms. Brunson:

We have reviewed your March 10, 2022 letter to the New Jersey Department of Environmental Protection requesting regarding an Environmental Assessment for the 2020 Integrated Natural Resources Management Plan (Plan) at Joint Base McGuire-Dix-Lakehurst. While most of the activities proposed in the Plan do not appear to require an application to the Commission, certain activities, such as the proposed mechanical tree thinning (Objective 8.7.2.1), would require an application to the Commission.

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 Plan, 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
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PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LaTOURETTE
Commissioner

April 7, 2022

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

RE: Comments on the 2020 Integrated Natural Resources Management Plan
at Joint Base McGuire-Dix-Lakehurst

Dear Ms. Brunson:

The New Jersey Department of Environmental Protection's (Department) Office of Permitting and Project Navigation (OPPN) distributed, for review and comment, the updated 2020 Integrated Natural Resources Management Plan (INRMP) for Joint Base McGuire-Dix-Lakehurst (JB MDL). The United States Air Force (USAF) will be preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the implementation of the INRMP (Proposed Action). The purpose of the Proposed Action is to implement the updated JB MDL INRMP to manage on-site natural resource projects that further support sustained biodiversity and environmental quality while ensuring safe and successful on-base military missions.

Based on the information provided for review, the Department offers the following comments for your consideration:

Natural Resources

The grassland areas of the Joint Base mentioned in this proposal provide critical breeding habitat for a variety of State listed species including particularly the Upland Sandpiper, Horned Lark, Grasshopper Sparrow, Vesper Sparrow, Eastern Meadowlark, Leonard's Skipper, Frosted Elfin and Dotted Skipper. These areas provide foraging resources for State listed Bats including the Big Brown, Hoary, and Red Bats. The proposed change in mowing regimes to an annual rotation and maintenance at a height of 7-14 inches will cause a significant impact to the habitats for these species and will render them less suitable Please clarify if JBMDL anticipates mowing throughout the year or changing the mowing schedule from the current schedule to keep the grass at 7-14 inches.

NJDEP Fish and Wildlife does not support a mowing schedule that allows mowing while birds are actively nesting; many nest in grasses seven (7) inches tall. The Upland Sandpiper is one of New Jersey's most imperiled grassland birds and the Joint Base is one of the stronger remaining populations for this species. NJ Fish and Wildlife recommends a timing restriction for mowing activities between April 15-July 31 with this date extending through September 30th for insect species. The optimal mowing window is late winter during February and March.

Forestry activities can negatively impact bats as well as snakes with the Northern Pine Snake and Corn Snake documented in the project area. To avoid negative impacts to bats, forestry activities should occur between October 1-March 31 with some detailed refinements to minimize impacts to snakes included in the attached document.

The forestry clearing and proposed thinning may serve to create habitat and offset losses from the runway areas. If buffer areas outside of the runway safety maintenance zones can be created and maintained for these grassland species, and provide suitable habitat to replace areas lost. It is optimal for adjacent new habitat areas to be created first to allow for the natural dispersal and occupation of these habitats. The runway habitats provide an attractive nuisance due to areas of grassland habitat suitable for these species on the base. If replacement areas can be created, it will allow for the problem to be moved away from the runways and provide critical habitat features for these species and help support their conservation. Creating a mix of grasslands and savannah areas in areas outside and in between the runway areas would serve to help preserve these habitat features on the Base.

If you have any questions regarding this information, please contact Kelly Davis at Kelly.Davis@dep.nj.gov.

Historic and Cultural Resources

Portions of the proposed action require consultation between the USAF and the Historic Preservation Office (HPO), pursuant to their obligation under Section 106 of the National Historic Preservation Act, as amended. The HPO regularly consults with the USAF in accordance with Section 106. Therefore, HPO looks forward to further consultation with the USAF as their projects develop.

If additional consultation with the HPO is needed for this undertaking, please reference the HPO project number 22-0747 in any future calls, emails, submissions, or written correspondence to help expedite your review and response. If you have any questions, please contact Jesse West-Rosenthal at Jesse.West-Rosenthal@dep.nj.gov.

Land Resource Protection

There are potential impacts to areas regulated by the NJDEP Division of Land Resource Protection (i.e., Freshwater Wetland Protection Act (NJSA 13:9B) and Flood Hazard Area Control Act (NJSA 58:16A-50).

Project activities proposing impacts to areas regulated by the Freshwater Wetland Protection Act may require appropriate Freshwater Wetland Permits (or Permit Equivalency) from the New Jersey Pinelands Commission (Commission). Should the project not establish the Pinelands Commission jurisdiction, permits / waivers from NJDEP Division of Land Resource Protection (Division) will be required, unless qualified for an exemption. A Certificate of Filing from the Commission may also be required as a part of any application made to the Division.

Impacts to regulated areas under the jurisdiction of the Flood Hazard Area Control Act (i.e., streams, flood hazard areas, riparian zones) shall require the appropriate authorization / permit(s) for the activities referenced by this proposal. The Division is responsible for implementing this set of regulations within the Pinelands.

If you have any questions regarding this information, please contact Brett Kosowski at Brett.Kosowski@dep.nj.gov.

Stormwater Management

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.

Air Evaluation and Planning

A portion of the Joint Base McGuire-Dix-Lakehurst, specifically McGuire and Lakehurst, currently have emission budgets for VOCs and NOx that were established under the Federal General Conformity regulation such that these emission levels are considered to conform to the State Implementation Plan. Emissions associated with the draft EA for the proposed activity should be included in the total estimated annual emissions for the McGuire and Lakehurst bases. The total estimated annual emissions from Federal Actions for McGuire and Lakehurst should not exceed the established budgets. If the total direct and indirect emissions from the draft EA in conjunction with the other emissions subject to General Conformity from the facility exceed the established annual emission budgets, then the action must be evaluated for conformity. A General Conformity Applicability Analysis and possibly a Conformity Determination will be required in accordance with the USEPA's Federal General Conformity regulation (40 CFR, part 93, Subpart B, Determining Conformity of General Federal Actions to State or Federal Implementation Plans). The emissions budgets for Lakehurst and McGuire can be found in the 1997 8-Hour Ozone Attainment Demonstration SIP at https://www.nj.gov/dep/baqp/8hrsip/Final_CompleteSIP.pdf.

There are two (2) National Ambient Air Quality Standards (NAAQS) for ozone that require consideration for addressing General Conformity; the 2008 8-hour ozone standard (75 ppb) and the 2015 8-hour ozone standard (70 ppb). For each standard, nonattainment areas are initially classified, however some areas are reclassified if attainment of the NAAQS is not achieved by the attainment date corresponding to the classification level. Burlington and Ocean counties are located in New Jersey's southern nonattainment area (Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE). The Philadelphia-Wilmington-Atlantic City nonattainment area is currently classified as "marginal" for both the 75 ppb standard and the 70 ppb standard but may be reclassified by the USEPA to "moderate" for the 70 ppb classification in the near future. If de minimis levels are the same for marginal and moderate classifications, the nonattainment classifications that are in effect at the time of the General Conformity applicability analysis and determination for all standards and nonattainment areas must be used for establishing de minimis levels.

Fort Dix does not have an emission budget established, emissions associated with project activities occurring at Fort Dix should be addressed and evaluated separately from the project activities occurring at McGuire and Lakehurst. Emissions associated with project activities that occur at Fort Dix need to be evaluated by conducting a General Conformity Applicability Analysis and possibly a subsequent Conformity Determination.

In accordance with Section 93.157 (d) (Reevaluation of Conformity) of the Federal General Conformity regulation (40 CFR 93. 153), if additional environmental analysis and/or new management strategies lead to changes in the estimated project emissions in the draft EA, these changes need to be reflected in the annual budget emission estimates, or the General Conformity Applicability Analysis, and if necessary, the subsequent Conformity Determination.

If you have any questions regarding this information, please contact Conor Milligan at Conor.Milligan@dep.nj.gov.

Air Permitting

Please review the requirements of N.J.A.C. 7:27-8.2(c) for air permit applicability for stationary sources. 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.

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

Thank you for giving the New Jersey Department of Environmental Protection the opportunity to comment on the Natural Resources Review for the proposed project. Please contact Elizabeth Lange at Elizabeth.Lange@dep.nj.gov or at (609) 292-3600 if you have any additional questions or concerns.

Sincerely,

David Pepe, Director
Office of Permitting and Project Navigation

Pinelands: Recommended Forestry Timing & Activity Restrictions to Minimize Harm to Listed Snake Species

Corn snakes and Northern pine snakes

"Critical habitat" for corn snake and Northern pine snakes refers to documented winter dens, summer dens, and nesting habitat.

General:

- Deep drum-chopping, root-raking or bulldozer scrapes in isolated patches of under 1 acre in size per 50 acres of forest can be applied during the active season, May 1 through September 30 inclusive.

Winter and summer dens:

Outside of 200 feet from winter dens w/ low pressure equipment:

- Low pressure harvesting equipment/vehicles (< 4 pounds per square inch) can be used during any season.
- Surface scarification using low pressure equipment/vehicles can be done during any season;
- Shallow drum-chopping (with an unfilled drum) used with low pressure equipment/vehicles can be applied during any season.

Outside of 200 feet from winter dens w/ heavy equipment:

- If heavy equipment/vehicles are utilized, no harvesting shall occur during the dormant season October 1 through April 30 inclusive to avoid impacting hibernating snakes in dens.
- If heavy equipment/vehicles are utilized, no surface scarification, deep drum chopping, or stump grinding shall occur during the dormant season October 1 through April 30 inclusive.

Within 200 feet of winter dens w/ low pressure equipment:

- Low pressure harvesting equipment can be used during the dormant season, October 1 through May 15 inclusive, with oversight by ENSP.
- No harvesting equipment/vehicles, regardless of pressure, shall be used in the active season, May 1 through November 30 inclusive; only manual selective tree felling, leaving logs and stumps behind for future den use.
- No drum chopping, root-raking, bulldozer scrapes or surface scarification, or stump grinding using equipment/vehicles, regardless of pressure, shall be applied in any season.

- Harvesting and surface scarification using hand tools clearing and removal can be applied during any season.

Within 200 feet of winter w/ heavy equipment:

- No harvesting equipment/vehicles, regardless of pressure, shall be used in the active season, May 1 through November 30 inclusive; only manual selective tree felling, leaving logs and stumps behind for future den use.
- No drum chopping, root-raking, bulldozer scrapes or surface scarification, or stump grinding using equipment/vehicles, regardless of pressure, shall be applied in any season.

Egg laying/basking sites (also winter dens for hatchlings) with open sandy, early successional habitats:

Within 300 meters of egg laying, commonly-used basking sites, and winter dens for hatchlings w/ low pressure equipment:

- Low pressure harvesting equipment can be used during the dormant season, October 1 through May 15 inclusive, with oversight by ENSP.
- No harvesting equipment/vehicles, regardless of pressure, shall be used in the active season, May 1 through November 30 inclusive; only manual selective tree felling, leaving logs and stumps behind for future den use.
- No drum chopping, root-raking, bulldozer scrapes or surface scarification, or stump grinding using equipment/vehicles, regardless of pressure, shall be applied in any season.
- Harvesting and surface scarification using hand tools clearing and removal can be applied during any season.

Within 300 meters of egg laying/basking sites/winter dens for hatchlings w/ heavy equipment:

- No harvesting equipment/vehicles, regardless of pressure, shall be used in the active season, May 1 through November 30 inclusive; only manual selective tree felling, leaving logs and stumps behind for future den use.
- No drum chopping, root-raking, bulldozer scrapes or surface scarification, or stump grinding using equipment/vehicles, regardless of pressure, shall be applied in any season.

Timber Rattlesnake

"Critical habitat" for Pinelands timber rattlesnakes refers to documented winter dens and the associated wetlands and streams and adjacent riparian/floodplain habitat (as multiple dens are often scattered along a long segment of stream corridor and/or the associated riparian/floodplain, and wetland embankments), gestation sites, and birthing sites.

General:

- To avoid disturbances to den locations along streams and/or riparian zones, forestry activities should incorporate a minimum undisturbed buffer distance of 1,000-feet in both directions of the stream's length with a 300-ft buffer on either side of the stream and/or riparian zone from documented dens.
- To avoid disturbances to den locations within wetlands, forestry activities should incorporate a minimum undisturbed buffer distance of approximately 300-ft around entire wetlands where dens have been documented.
- Heavy equipment or site preparation should be avoided within documented timber rattlesnake den areas, adjacent/connected suitable denning habitat, and suitable habitat lacking documented dens unless absolutely necessary in order to reduce disturbance and/or damage to den sites. If absolutely necessary, activities should occur during the rattlesnakes' active period (May 16 – September 07) before snakes begin to congregate around den areas, making a local population more vulnerable to harm.
- No activity within 200-ft of documented gestation sites/rookeries June 01 – September 10.

In Atlantic white-cedar swamps:

- Forestry activities within Atlantic white-cedar swamps that are conducted during periods when snakes have dispersed from the dens, usually May 16 through September 07, will reduce potential impacts to snakes.
- Site preparation activities in Atlantic white-cedar swamps with documented rattlesnake occurrence should be conducted during periods when snakes have temporarily migrated out (i.e., June 01 through September 15).

Outside Atlantic white-cedar swamps:

- Site preparation (excluding ground surface alteration and heavy equipment) conducted in areas outside of Atlantic white-cedar swamps during the overwintering period (October 15 through April 15) will also help minimize this risk.

MANCHESTER TOWNSHIP

1 COLONIAL DRIVE • MANCHESTER, NJ 08759 • (732)657-8121

ENVIRONMENTAL COMMISSION

GABRIELLE FOX
CHAIRPERSON

ROBERT A. HUDAK
MAYOR

April 19, 2022

Ms. Catherine Brunson
NEPA/Environmental Impact Analysis Process (EIAP)
Project Manager 787 CES/CEJEA
Joint Base McGuire-Dix-Lakehurst

Via email: catherine.brunson@us.af.mil

Re: Review of potential environmental impacts associated with implementation of the updated 2020 Integrated Natural Resources Management Plan (INRMP) at Joint Base McGuire-Dix-Lakehurst (JB MDL) (Proposed Action).

Dear Ms. Brunson:

Please accept this in response to your letter dated March 10, 2022 (received at our office on March 21, 2022). The Manchester Township Environmental Commission accepts your request to participate and comment on the Environmental Assessment (EA) on the attached description of proposed action and alternatives (DOPAA). We understand that the EA is proposing three alternatives associated with the implementation of the Proposed Action: No Action; No impact (FONSI), or an Environmental Impact Statement (EIS).

Pursuant to enabling legislation NJSA 40:56A section 40:56A-6 Studies and recommendations[1], after careful discussion at the April 5, 2022 special meeting called and properly advertised for such purpose, we offer the following general comments and information.

General Comments:

1. The Manchester Environmental Commission 2*020 Natural Resource Inventory* at this link for your information.

2. *Future Maps:* Please show town boundaries as it is difficult to determine which parts of the proposed action impact Manchester Township or another town. Kindly mark the streams and wetlands on maps where work is proposed. An in-color digital map would be easier to review.

[1] NJSA 40:56A-6 Studies and recommendations. An environmental commission shall have power to study and make recommendations concerning open space preservation, water resource management, air pollution control, solid waste management, noise control, soil and landscape protection, environmental appearance, marine resources and protection of flora and fauna.

3. *Previous studies:* Provide studies that are the basis for your proposals, especially the Atlantic White Cedar plantings that did not work and assumptions are as to why.

4. *List of involved agencies referred to in the DOPAA:* There was no list or copies of said correspondence attached. Please share Appendix A which contains the list of agencies consulted during this analysis and copies of correspondence, particularly US Fish and Wildlife. This is really important to our deliberations.

5. *Timing:* Because we meet monthly, we need 45 days to respond in order to manage our notice requirements. Due to your 30-day requirement, we had to hold a special meeting on April 5, 2022.

6. Digital documents are always welcome.

7. You and/or your representative are invited to *attend one of our scheduled meetings* on the fourth Tuesday of the month. A face-to-face presentation would be more helpful in understanding your goals and objectives.

Specific Comments and/or Questions in order to inform us of the impacts of proposal

8. Tree thinning and the mowing needs more detail.
    a) What species are being targeted for thinning and why?
    b) What is the purpose of the thinning? Is this a management plan?
    c) Removing trees increases erosion. Is there a stormwater management plan to prevent erosion?
    d) Is there a target density or a target canopy layer?
    e) How many trees will be removed? What size and height?
    f) What is the restoration plan? How many trees and what species?
    g) Why are the woodlots creating an "edge" an environmental concern?
    h) Will carbon sequestration be lost with tree removal?
    i) What is the mass carbon capture?
    j) Planting more trees would be more beneficial to reducing edges. Which edge species are you targeting? Deer should be kept out of the base via fencing.
    k) Stormwater regulations: Are you using regulations from the DEP or the Pinelands Commission?
    l) Did you compare the proposed action with the recently formed NJ Forest Task Force on managing public forests in NJ?

9. Impact of the proposed action on the natural resources.
    a) Border protection of waters and wetlands is planned to be 50 feet as mentioned in the EA. We would like to suggest the protection be increased to at least 200 feet as these areas and their trees assists in carbon sequestration.
    b) The existing condition of the headwaters of the Toms River are pristine protected C-1 waterways upstream of the JBMDL. When the same stream leaves the base, it quickly becomes impaired. We are concerned about the net increase of pollutants.

c) What are the contaminants picked up in the Toms River as it travels through the base? What is the impact on the amphibian population and the Barnegat Bay?
d) Have PFOAs entered the Toms River?
e) Please post the Stormwater Pollution Prevention Plan (SPPP) on your web page. Kindly send the information or link to the SPPP, the Stormwater Management Plan, and the most recent Annual Report.
f) The level of imperviousness at the project areas are important considerations.

10. Integrated Pest Management[2]
    a) Using herbicide and seeding a monoculture.
        1. What species will be seeded? Why is this the distinction? Why not seed a stable and diverse ecosystem that does not require the use of an herbicide?
        2. Overseeding 5% of grass, where and why? Is this done in conjunction with killing other grasses?
    b) Pest control
        1. Is the insecticide for mosquito treatment? Is it pollinator friendly?
        2. What is being used to control invasive species?
    c) Do we have access to the IPM analysis?

Thank you for this opportunity to participate. Please respond with your comments and/or answers. We look forward to an open and transparent dialogue.

Sincerely,

Gabrielle Fox
Chairperson
Environmental Commission

1. [2] Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. (https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles)

PINELANDS PRESERVATION ALLIANCE

SAVE BARNEGAT BAY

April 21, 2022

Ms. Catherine Brunson, USAF
JB MDL NEPA/EIAP Project Manager
787 CES/CEIEA
Joint Base McGuire-Dix-Lakehurst
Sent via email: catherine.brunson@us.af.mil

Re: Description of Proposed Action and Alternatives for INRMP 2020

Dear Ms. Brunson,

Thank you for the opportunity to provide comments on the description of proposed action and alternatives (DOPAA) as part of the Environmental Assessment preparation for the 2020 Integrated Natural Resources Management Plan (INRMP).

Pinelands National Reserve Regulations

Joint Base McGuire-Dix-Lakehurst is located within the Pinelands National Reserve. The DOPAA fails to reference the applicable standards from the Pinelands Comprehensive Management Plan (CMP), the regulations that govern land use within the Pinelands. However, the INRMP addresses the CMP and its administering agency, the Pinelands Commission, with frequency and inconsistency. For example:

- The Executive Summary on page 8 states that the actions in the INRMP "are consistent with standards identified by the New Jersey Pinelands Commission." Yet, neither the Pinelands Protection Act nor the CMP are included in the list of "federal and state laws and regulations that impact the management of natural resources at JB MDL" on page 14.

- The Installation-Specific policies on page 15 list "NJAC 7:50-1.1 et seq, Pinelands", yet states "USAF does not generally consult with the Pinelands Commission on major projects. The Commanding Officer generally writes a military 'mission essential' exemption letter."

- Page 73 of the INRMP on Wetlands Protections states "[t]he Pinelands Comprehensive Management Plan (CMP) places a 300-foot restriction on development of lands adjacent to wetlands." Yet page 75 under *2.4.1 Natural Resource Constraints to Mission and Mission Planning* states that "A minimum 50-foot wetlands buffer is required by the NJDEP." But the INRMP seems to acknowledge the Pinelands development restrictions on page 121 (regarding wildfire management) by stating that "stream corridors and wetlands, however, are provided extra protection due to Pinelands regulations. These protections often prevent JB MDL from developing new facilities on or near streams and wetlands."

- The section on Stormwater Drainage on page 78 lists the National Pollutant Discharge Elimination System, NJAC 7:8 and NJAC 7:14A, but not the CMP.

- Section 7.8 on Forest Management points out that native Pinelands plants are used "to ensure consistency with the … Pinelands CMP Forestry Standards", yet page 115 does not include the CMP among the list of standards and practices used to guide harvesting activities.

The Joint Base and its lawyers from time to time assert that the Base is not subject to the development review procedures of the Pinelands Commission and Pinelands Comprehensive Management Plan, as it has done in various places within the INRMP. This is not true, and we ask the Base and its attorneys to stop making this legally indefensible claim as a means to avoid or minimize the environmental review procedures of the Pinelands program. Strikingly, the federal government itself has not raised this claim in any judicial proceeding of which we are aware in the 40 years since adoption of the Pinelands CMP. This failure to raise such a claim in front of a court includes the appeals of the Southern Reliability Link pipeline, where New Jersey Natural Gas did expressly raise this argument, and the Base had the opportunity to chime in if it thought the argument had merit. It did not. (The New Jersey Appellate Division simply ignored the argument altogether.) It is irresponsible for the Joint Base and its lawyers to continue making this groundless claim of immunity.

The only possible basis for trying to exempt the Joint Base from the Pinelands CMP would have to be the Federal Enclave Doctrine, but that doctrine does not apply because Congress has expressly made federal land within the Pinelands National Reserve subject to the CMP. In one of its few decisions on this doctrine, the United States Supreme Court explained that "the activities of federal installations are shielded by the Supremacy Clause from direct state regulation unless Congress provides 'clear and unambiguous' authorization for such regulation." Goodyear Atomic Corp. v. Miller, 486 U.S. 174, 180 (1988) (emphasis added).

In 1978, the Federal Government enacted the National Parks and Recreation Act, 16 U.S.C. §§ 471 et seq., which addressed conservation and national forests. Section 502 of the NPRA, entitled "Pinelands National Reserve," designated 1,000,000 acres of the Pine Barrens in New Jersey as the Pinelands National Reserve (the "PNR"). Id. § 471i (hereafter, the "Federal Act"). Pursuant to the Federal Act, the U.S. Secretary of the Interior was authorized to request that the Governor of New Jersey "establish a planning agency to create a Comprehensive Management Plan" ("CMP") for the PNR. This CMP was to include at least "'a program for

state and local government implementation of the [CMP] in a manner that will ensure the continued, uniform, consistent protection of this area....'" (Id. (quoting 16 U.S.C. § 471i(f)(8)).3)

In 1979, New Jersey adopted the Pinelands Protection Act, N.J.S.A. 13:18A–1 et seq. In line with the Federal Act, the Pinelands Protection Act also established the Pinelands Commission as "the planning entity authorized in the [Federal Act]" and stated that it "shall exercise all the powers and duties as may be necessary in order to effectuate the purposes and provisions thereof." See id. The Commission was tasked with preparing and adopting the CMP applicable to the pinelands area, with specific portions meant to address the Preservation Area and Protection Area. Id.; See also N.J.S.A. 13:18A–8. Subsequent to the adoption of the CMP, and its approval by the Secretary of the Interior in 1981, the Commission was authorized "to commence a review ... of any application for development in the pinelands area." N.J.S.A. 13:18A–15.

The Federal Act expressly specifies the following key points:

1. The entirety of the Joint Base is included in the Pinelands National Reserve. Id. § 471i(c). (The Federal Act cites and incorporates the official map that shows the Pinelands National Reserve boundary. We assume this point is not contested.)

2. The State of New Jersey is charged to create a "planning entity" to carry out the provisions of the Federal Act. Id. § 471i(d). This planning entity is now known as the Pinelands Commission. Pinelands Protection Act, N.J.S.A. 13:18A-4.

3. The planning entity – that is, the Pinelands Commission -- is charged to "develop a comprehensive management plan for the Pinelands National Reserve." 16 U.S.C.A. § 471i(d). This plan is now known as the Pinelands Comprehensive Management Plan or CMP. N.J.S.A. 13:18A-9.

4. The comprehensive management plan, or CMP, is to include, among other elements, "[a] land use capability map and a comprehensive statement of policies for land use management of the area" and "[a] coordination and consistency component which details the ways in which local, State and Federal programs and policies may best be coordinated to promote the goals and policies of the management plan, and which details how land, water and structures managed by governmental or nongovernmental entities in the public interest within the area may be integrated into the management plan." 16 U.S.C.A. § 471i(f)(2) and (3). The CMP is also to include "[a] program for State and local governmental implementation of the comprehensive management plan in a manner which will insure the continued, uniform, consistent protection of this area in accord with the purposes of this section." Id. § 471i(d)(8).

5. The plan authorized by the Federal Act, the CMP, includes development standards specifically applicable to the Joint Base and certain other federal lands which are encompassed within the CMP's Federal and Military Installations management area. N.J.A.C. 7:50-5.29.

6. The planning entity, or Pinelands Commission, is to include a representative of the Secretary of the Interior. 16 U.S.C.A. § 471i(d). This requirement is carried out by the State Act, N.J.S.A. 13:18A-5a(3).

7. The comprehensive management plan, or CMP, is to be approved by the United States Secretary of the Interior prior to its going into effect. 16 U.S.C.A. § 471i(g). This requirement is carried out by the State Act, N.J.S.A. 13:18A-10b.

In the Federal Act, therefore, Congress requires the CMP to apply to federal land in the Pinelands National Reserve, such as the Joint Base, and to incorporate methods for State and local agencies – the Pinelands Commission foremost among them – to ensure consistent application of its land management policies to federal lands along with all others. The CMP meets these requirements by establishing permitted use and other development rules for all parts of the Pinelands, as well as Pinelands development review and Commission approval procedures which are applicable to all parts of the Pinelands. In sum, the Federal Act expressly authorizes – indeed requires – the application of the CMP regulations at issue here to all federal land inside the Pinelands National Reserve.

Given the Congressional authorization for the creation and implementation of the CMP for the entire Pinelands National Reserve, the inclusion of the Joint Base in the Pinelands National Reserve, the Federal Act's demand that the CMP include methods to ensure consistent application to federal and other lands, the approval of the CMP by the Secretary of the Interior, and the placement of a representative of the Secretary on the Commission's governing board, it is clear that Congress contemplated and expressly authorized the application of the Pinelands CMP's procedures and development standards to federal land such as the Joint Base. The Federal Enclave Doctrine, therefore, does not apply to exempt the Joint Base from development regulation by the Pinelands Commission under the CMP.

Forestry

We have a number of concerns about the forestry practices proposed in the INRMP. The DOPAA contains only a brief paragraph to address the potential adverse impacts of these activities. It states neither the goals of the thinning projects, nor the rationale behind the selection of the five areas to be thinned. Referencing the full INRMP provides little clarification, as *Section 7.8 Forest Management* is riddled with contradictions about the purpose of these activities.

The INRMP seems to go out of its way to insist that harvesting trees for profit is not the goal of forest management on the Joint Base. Page 111 states "Managing the forested land for commercial timber production is not one of the main stated management goals, although forest products may be sold as a consequence of land clearing for mission support purposes or at some point in the future when managed stands containing merchantable forest products are considered mature." In other words, for right now trees will only be sold if they are inevitably removed to achieve the mission. That point is reiterated on the same page with "The primary objective is to support the military mission. The objective is not to create or maintain a sustained yield forest product operation" and "The production of timber products may result from such management activities but is not considered a primary management goal." Again, on page 112 with

"…harvesting for profit is not considered a primary forest management activity at JB MDL." These assertions seem to be supported by the listed goals on page 107: "The objectives at JB MDL include":

- Provide and improve training resources,
- Reduce the risk of catastrophic wildfire,
- Provide soil and watershed protection,
- Provide wildlife habitat,
- Protect rare and T&E species habitat,
- Protect ecologically unique and sensitive natural areas,
- Provide areas for outdoor recreation,

And lastly

- Facilitate the sale and utilization of forest products where possible.

However, the Program Overview/Current Management Practices section, before any proposed new activities are described, states that "…18,267 acres are considered potentially commercial forest, where forest products could be harvested." This introduces the lens through which all of the forestry activities are obviously viewed by the JB. The short descriptions of the nine forest cover types found on the JB each include an assessment of the potential marketability of the timber in each type, but do NOT include the wildlife species that depend upon it, the carbon sequestration value, its benefit to water quality or any other ecological services provided by that unique forest type. The *Acceptable Timber Harvesting Practices for the Installation section* on page 112 states that "Silvicultural systems that produce stand structures approaching the complexity and diversity in natural forests are most consistent with the tenets of ecosystem management and forest management goals at JB MDL". Yet neither the Thinning section in the INRMP nor the brief paragraph addressing adverse impacts of Mechanically Reducing Tree Density in the DOPAA provide an adequate rationale for the tree removal in line with the supposed goal of creating natural complexity and diversity within the stand.

For example, both the DOPAA and the INRMP mention reducing density to decrease susceptibility to disease and pests. But no specifics are given: Which diseases? Which pests? What threshold density that allows these diseases and pests to thrive has been reached in these 5 selected stands, and what is the target density of the thinning operations that will remove these risks? What scientific evidence supports those densities? The INRMP mentions promotion of a shrub layer that "benefits wildlife": which species of wildlife are the target beneficiaries? Which species of shrubs will benefit them? After these brief nods to ecological considerations, both the DOPAA and INRMP discuss removing marketable trees and techniques such as "row thinning", which would fail to recreate a natural habitat. This technique would, however, produce favorable conditions for future timber harvests, as is covered extensively in the INRMP. The INRMP also discusses "high quality crop trees" in terms of market value, but makes no mention of any

particular flora species as valuable habitat for specific wildlife species, or valuable in terms of water quality protection, stormwater management, or carbon sequestration. There is no reason given as to how the five stands to be thinned were chosen, or what conditions are to be achieved in each. Page 114 of the INRMP does list an ideal basal area of 60 square feet per acre, but gives no reference to scientific data supporting this target or any consideration of different densities in different stand types managed for different ecological purposes.

The inadequate evaluation of the potential adverse impacts of thinning in the DOPAA, and the thinning section of the INRMP, read as a thinly veiled attempt to pass off a logging plan as ecologically sound. Management of the forests of the JB MDL should be held to the high standards appropriate for a National Reserve and internationally recognized biosphere. To truly manage the Pinelands forests for maximum ecological benefit, the plan must align with CMP standards and the most recent science regarding wetlands protections, carbon sequestration, threatened and endangered species habitat management, stormwater management, proforestation, erosion reduction and water quality preservation.

On behalf of Pinelands Preservation Alliance and Save Barnegat Bay, we appreciate the opportunity to provide input. Please do not hesitate to reach out with any questions.

Thank you for your consideration,

Carleton Montgomery
Executive Director
Pinelands Preservation Alliance
carleton@pinelandsalliance.org

Britta Forsberg
Executive Director
Save Barnegat Bay
britta@savebarnegatbay.org

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Jersey Field Office
4 East Jimmie Leeds Road, Suite 4
Galloway, New Jersey 08205
(609) 646-9310

In Reply Refer To:

April 25, 2022

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

Dear Ms. Brunson:

The U.S. Fish and Wildlife Service (Service), New Jersey Field Office has reviewed the Environmental Assessment (EA) on Description of Proposed Action and Alternatives (DOPAA), dated March 2022, for the Joint Base McGuire-Dix-Lakehurst's (JB MDL) 2020 Integrated Natural Resources Management Plan (INRMP). The EA was prepared to evaluate the potential environmental impacts associated with implementation of the updated INRMP to manage on-site natural resource projects that further support sustained biodiversity, including protecting federally listed threatened and endangered species pursuant to Federal statutes including the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA), and environmental quality while ensuring safe and successful on-base military missions. We have no comments on both EA and the DOPAA, but wanted to update you on recent announcement related to federally listed northern long-eared bat (*Myotis septentrionalis*, threatened) (NLEB).

On March 23, 2022, the Service published a proposal to reclassify the NLEB as endangered under the ESA. A decision is expected by the end of November 2022, and if a final rule is published, the NLEB would lose the 4(d) rule that would allow activities, such as tree removal, to occur, as 4(d) rules only apply to threatened species.

For future projects that propose tree removal, if the proposed tree removal is likely to be completed before December 30, 2022, the 4(d) rule is still valid to use. The existing IPaC determination key (Dkey) remains a valid way to consult on projects that may affect the NLEB. If the species' status is changed to endangered, the existing key will go away, but it's valid for use for projects completed while the species is still designated as threatened with the existing 4(d) rule and related programmatic biological opinion in effect.

If the proposed tree removal is likely to be ongoing on December 30, 2022 or that are planned for implementation after that date, we would request a time of year restriction on tree removal based on the habitat or a survey to reduce adverse impacts to the northern long-eared bat. A team of Service staff is also drafting a new assisted Dkey that would replace the existing Dkey later this year. The intent is to streamline projects that could occur without adverse effects to the species. The Dkey is not yet available, but is planning to be released before the final rule for uplisting is published and would also be an option for project proponents for projects that may affect, but are not likely to adversely affect the NLEB.

Thank you for the opportunity to review EA, DOPPA, and its supporting documents. The Service appreciates the conservation plans, actions, and projects that will be implemented for the next few years. Please contact me if you have any questions regarding these comments.

Sincerely,

Eric Schrading
Field Supervisor

HPO Project # 22-1001-1, -2
HPO-E2022-224

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

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

Katherine J. Marcopul, Ph.D.
Administrator and Deputy State Historic Preservation Officer
New Jersey Historic Preservation Office
Department of Environmental Protection
Mail Code 501-04B, PO Box 420
Trenton, NJ 08625-0420

SUBJECT: Section 106 Consultation; Environmental Assessment
Integrated Natural Resources Management Plan (INRMP) Update
Joint Base McGuire-Dix-Lakehurst (JB MDL)
Burlington and Ocean Counties, New Jersey

Dear Dr. Marcopul:

The U.S. Air Force (USAF) is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with implementation of the updated 2020 Integrated Natural Resources Management Plan (INRMP) at Joint Base McGuire-Dix-Lakehurst (JB MDL) in Ocean and Burlington Counties, New Jersey (Proposed Action). We would like to give you an opportunity to review and comment on the Proposed Action and invite you to participate in consultation in accordance with 54 U.S.C. Section 306108 of the National Historic Preservation Act of 1966 (NHPA), as amended, 36 Code of Federal Regulations (CFR) Part 800 (Protection of Historic Properties), the Council on Environmental Quality regulations and the National Environmental Policy Act (NEPA) of 1969.

The purpose of the Proposed Action is to implement the updated 2020 INRMP to manage on-site natural resource projects that further support sustained biodiversity and environmental quality while ensuring safe and successful on-base military missions. Implementation of the updated INRMP is needed for (1) compliance with environmental laws and regulations; (2) implementation of guidelines and policies for on-site natural resource management; (3) application of best available data and adaptive management; (4) management of the Bird/Wildlife Aircraft Strike Hazard (BASH) risk; and (5) sustainment of military operation and training missions.

The previous version of the INRMP prepared in September 2015 described projects planned for years 2015–2019. Since that time, annual reviews were conducted to identify new management measures and projects to be developed and incorporated into the five-year INRMP revision. Implementation of the 2020 INRMP (the Proposed Action) involves executing natural resource management measures presented in the Goals and Objectives section of the updated INRMP. These measures consist of new and previously established ongoing projects that align with current ecological trends, species statuses, species occurrences, and knowledge gained during the past five years.

As discussed in the attached Description of the Proposed Action and Alternatives (DOPAA), new projects including the replacement of floating fishing docks, marshland bird surveys, flora and fauna inventories, and updating management plans would not involve ground-disturbing activities and would produce negligible visual effects and therefore do not have the potential to affect historic properties. Minor projects, as well as those listed as administrative actions, do not warrant further analysis under NEPA; therefore, the focus of the analysis in the EA is limited to three new vegetative management strategies proposed at Dix and Lakehurst (please refer to **Figures 2 and 3** of the DOPAA).

The three new vegetative management strategies include the annual mowing of grasslands on approximately 34 acres at Dix and approximately 122 acres at Lakehurst; the mechanical reduction of tree density through selective thinning at five distinct forest stands, totaling 320 acres, along the north and northwest boundaries at Lakehurst; and mowing and tree clearing at the Lakehurst airfield to support safe flight operations. Of the three new vegetative management strategies, only the mowing and tree clearing proposed for the Lakehurst airfield has the potential to produce indirect visual impacts to historic properties. Trees that will be subject to mechanical reduction will be flush cut to grade.

The Proposed Action is an **undertaking** as defined in 36 Code of Federal Regulations (CFR) § 800.16(y) and is subject to Section 106 of the NHPA and its implementing regulations at 36 CFR § 800. This letter provides the necessary documentation and analysis under 36 CFR § 800.11 to support a finding of no adverse effect to historic properties.

Identification of the Area of Potential Effects (APE)

Because the proposed projects, as described in the DOPAA, do not involve any ground-disturbing activities and do not have the potential to affect archaeological resources, an Area of Potential Effects (APE) for Archaeology was not defined for the Proposed Action.

The proposed APE for Historic Architecture (APE-Architecture) is limited to the section proposed for mowing and tree clearing at the Lakehurst airfield under Project 8.10.1.2.5 of the DOPAA (please refer to **Figure 3** of the DOPAA). This determination was made because the proposed tree clearing is anticipated to produce negligible indirect visual impacts to surrounding historic properties. Please see the attached map illustrating the APE-Architecture.

Potential Effects and Recommendations

An examination of the New Jersey Department of Environmental Protection's (NJDEP) Cultural Resources GIS Online Viewer, LUCY, indicates that there is one historic property eligible for the National Register of Historic Places proximate to the APE-Architecture: the Lighter-Than-Air Historic District (SHPO Opinion: 6/27/1995). The historic district is located adjacent to the east of the APE-Architecture. Due to the anticipated limited direct and indirect impacts from the Proposed Action, there will be no adverse effect to historic properties.

As outlined in the USAF Integrated Cultural Resources Management Plan for JB MDL, in the case of inadvertent discovery of prehistoric or historic artifacts during project construction, all construction would cease, the site would be secured, and the JB MDL Cultural Resources Manager would contact the New Jersey State Historic Preservation Office and federally recognized tribes, as applicable, within 24 hours.

Pursuant to 36 CFR § 800.3, USAF is seeking your input on this project so that you may have an opportunity to comment upon these cultural resource findings and/or other concerns. Please be assured that, in accordance with confidentiality and disclosure stipulations in 54 U.S.C. 307103 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties. We also will continue to consult with your office under 54 U.S.C. Section 306108 of the NHPA if project parameters change in a matter that may impact cultural resources.

If we can provide any assistance or additional information that would aid in your review, please feel free to contact Sharon White, JB MDL Cultural Resources Manager, via email at sharon.white.7@us.af.mil.

Sincerely,

WHITE.SHARON.D.1567708388 Digitally signed by WHITE.SHARON.D.1567708388 Date: 2022.04.28 13:53:58 -04'00'

SHARON D. WHITE

JB MDL, Cultural Resources Manager

Attachments:

Area of Potential Effects Map

Description of the Proposed Action and Alternatives

As proposed, the project will **not adversely affect** historic properties. Pursuant to 800.5(c), if no consulting parties object to this finding within the 30-day review period, the project may proceed, as proposed, unless resources are discovered during project implementation, pursuant to 800.13.

Katherine J. Marcopul 5/27/2022

Katherine J. Marcopul — Date

Deputy State Historic Preservation Officer **NAE**

WHITE, SHARON D GS-12 USAF AMC 787 CES/CEIEA

From: Susan Bachor <sbachor@DelawareTribe.onmicrosoft.com>
Sent: Thursday, June 16, 2022 3:33 PM
To: WHITE, SHARON D GS-12 USAF AMC 787 CES/CEIEA
Cc: lheady@delawaretribe.org; Katelyn Lucas
Subject: [Non-DoD Source] Re: Request for Consultation, Environmental Assessment, JB MDL Integrated Natural Resources Management Plan 2020 Update
Attachments: Medicinal Herbs plus of NJ usda_nj_final2_common_sort.xlsx

After review of the draft EA/INRMP we have a few comments.

* We do not approve of pesticide/herbicide use.
* Removal of an entire stand of pines is an action we would like to discuss further. We understand the wildlife issue, but don't the trees also help with sound and visual barrier? This is unfortunate especially because the White Cedar Project is not being implemented.
* We prefer stumps be grinded down or left at habitat height.

Please see sacred and medicinal plant species used by the Lenape. The list is not comprehensive. We would prefer other options than standard non-native grasses.

Best,
Susan Bachor, M.A.
Deputy THPO & Archaeologist
Delaware Tribe Historic Preservation
126 University Circle
Stroud Hall, Rm. 437
East Stroudsburg PA 18301
NEW ***cell-1.539.529.1671***

sbachor@delawaretribe.onmicrosoft.com - electronic submissions preferred Please call for appointment.

From: WHITE, SHARON D GS-12 USAF AMC 787 CES/CEIEA
Sent: Thursday, April 28, 2022 2:07 PM
To: Susan Bachor
Cc: lheady@delawaretribe.org
Subject: Request for Consultation, Environmental Assessment, JB MDL Integrated Natural Resources Management Plan 2020 Update

Good Afternoon,

Please find attached documentation in support of Section 106 consultation for the above-referenced project. JB MDL welcomes the Delaware Tribe of Indian's input and perspective on the above referenced project. Please do not hesitate to contact me if you have difficulties accessing the attached document or need further information.

V/r,

Dr. Sharon D. White

Archaeologist, GS-12, DAF

Cultural Resources Program Manager

787 CES/CEIEA

2404 Vandenberg Avenue

JB MDL, NJ 08641

(609) 754-1795

DSN: 650-1795

sharon.white.7@us.af.mil <mailto:sharon.white.7@us.af.mil>

Appendix B: Air Pollutant Emissions Calculations

Air Emissions from Annual Mowing

Equipment	Number	Hours/Acre	Total Hours	Total Hours Per Unit	Horsepower
Loader/Tractor	2	1.5	1632	816	250
Bush Hog (towed)	2	1.5	1632	816	N/A

Total acres subject to mowing/year: 544

Emission Factors (lb/1000 hp hr)[1]									
Equipment	**Load Factor**	**BSFC[2]**	**CO**	**VOC**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
4 Stroke Tractors/Loaders/Backhoes	48	730	541.957	11.290	4.591	0.014	0.262	0.242	2293.847

Calculation of Emissions
E(Pol) = OT x (LF/100) X hp rtd x (1/1000) x EF(Pol) X N

Where:
E(Pol) - Annual emissions of each individual pollutant (lb/yr)
OT = Operaitng tine (hr/unit)
LF - Load factor (%)
100 = Factor for converting percent to a fraction (%)
hp rtd = Enginer rated horsepower (hp)
1000 = Facor converting from hp tp 10^3 hp (hp/10^3 hp)
EF(Pol) = Emission factor of each pollutant (lb/10^3 hp-hr)
N = Number of nonroad engines and equipment used each year (units/yr)

Mowing Emission Estimates							
Equipment	**CO**	**VOC**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
4 Stroke Tractors/Loaders/Backhoes	106136.8589	2211.0336	899.1014	2.7418	51.3101	47.3933	449226.9965
TOTAL (lbs/year)	106136.859	2211.034	899.101	2.742	51.310	47.393	449226.996

TOTAL (tons/year)	53.068	1.106	0.450	0.001	0.026	0.024	224.613

Sources:
[1] U.S. Air Force. 2021. Air Force Guide for Air Force Mobile Sources. Methids for Estimating Emissions of Air Pollutants from Mobile Sources at U.S. Air Force Installations. Table 4-1. Criteria Pollutant Emission Factors for Nonroad Engine and Equipment. June 2021.
[2] Brake specific fuel consumption

Air Emissions from Mechanical Tree Thinning

Equipment	Number	Hours/Acre	Total Hours	Total Hours Per Unit	Horsepower
Chain Saw	4	4	7152	1788	4
Stump Grinder	3	6	8046	2682	50
Drum Chopper (towed)	3	4	5364	1788	N/A
Loader/Tractor	2	4	3576	1788	250

Total acres subject to tree thinning: 447

Emission Factors (lb/1000 hp hr)[1]									
Equipment	**Load Factor**	**BSFC[2]**	**CO**	**VOC**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2 Stroke Chain Saws <6 HP (Commerical)	70	650	576.681	161.819	3.619	0.010	20.971	19.293	1690.016
4 Stroke Chippers/Stump Grinders	78	640	291.953	6.498	3.722	0.011	0.213	0.196	1930.398
4 Stroke Tractors/Loaders/Backhoes	48	730	541.957	11.29	4.591	0.014	0.262	0.242	2293.847

Calculation of Emissions
E(Pol) = OT x (LF/100) X hp rtd x (1/1000) x EF(Pol) X N

Where:
E(Pol) - Annual emissions of each individual pollutant (lb/yr)
OT = Operaitng tine (hr/unit)
LF - Load factor (%)
100 = Factor for converting percent to a fraction (%)
hp rtd = Enginer rated horsepower (hp)
1000 = Facor converting from hp tp 10^3 hp (hp/10^3 hp)
EF(Pol) = Emission factor of each pollutant (lb/10^3 hp-hr)
N = Number of nonroad engines and equipment used each year (units/yr)

Mechanical Tree Thinning Emission Estimates							
Equipment	**CO**	**VOC**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2 Stroke Chain Saws <6 HP (Commerical)	11548.383	3240.523	72.473	0.200	419.957	386.354	33843.584
4 Stroke Chippers/Stump Grinders	91613.100	2039.033	1167.941	3.452	66.838	61.504	605747.310
4 Stroke Tractors/Loaders/Backhoes	232564.588	4844.765	1970.090	6.008	112.429	103.847	984335.625
TOTAL (lbs)	335726.071	10124.321	3210.504	9.660	599.224	551.705	1623926.519

TOTAL (tons)	167.863	5.062	1.605	0.005	0.300	0.276	811.963
TOTAL (tons/year)	33.57261	1.01243	0.32105	0.00097	0.05992	0.05517	162.39265

Sources:
[1] U.S. Air Force. 2021. Air Force Guide for Air Force Mobile Sources. Methods for Estimating Emissions of Air Pollutants from Mobile Sources at U.S. Air Force Installations. Table 4-1. Criteria Pollutant Emission Factors for Nonroad Engine and Equipment. June 2021.
[2] Break specific fuel consumption

Air Emissions from Prescribed Burning

Emission Factors (lb/ton) - Grasslands[1,2]					
PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	CO_2e
15.74	15.01	101.0	15.0	ND	2,285.0

Grasslands acres of burning (max): 151.6

Calculation of Total Mass Burned (Q)
Q=A x LF, where A=Area burned (acres/yr) and LF = Fuel loading factor (ton/acre)

Calculation of Emissions
E(Pol) = Q x EF(Pol), where E(Pol) = Annual emission of pollutant from open/prescribed burn (lb/yr), Q = Annual mass of material burned (ton/yr), and EF (Pol) = Emission factor of pollutant

Fuel Loading Factor for Grasslands (tons/acre)[1,3] = 2

Total Mass Burned for Perscribed Burning of Grasslands (Q) = 122 acres X 2 tons/acre
Q = 303.2 tons/year

Prescribed Burning Emission Estimates

Annual Emissions	PM_{10}	$PM_{2.5}$	CO	VOC	NO_X	CO_2e
Tons	2.386	2.276	15.312	2.274	ND	346.406
Tons/Year	1.193	1.138	7.656	1.137	ND	173.203

Sources/Notes:
[1]Section 2.5 - Open Burning, Compilation of Air Pollutant Emission Factors - Volume 1: Stationary Point and Area Sources, Fifth Edition, U.S. Environmental Protection Agency, January 1995.
[2] CO2e data sourced from Title 40-Protection of the Environment, Chapter I-Environmental Protection Agency,Subchapter C-Air Programs, Part 98-Mandatory Greenhouse Gas Reporting, Subpart C-General Stationary Fuel Combustion Sources, U.S. Environmental Protection Agency.
[3]Based on data for Field Crops.
ND - No Data Available