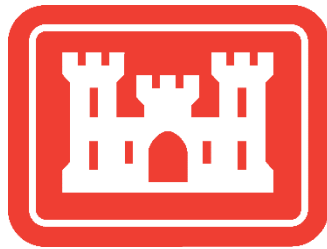


**DESCRIPTION OF PROPOSED ACTION AND
ALTERNATIVES
INSTALLATION DEVELOPMENT ENVIRONMENTAL
ASSESSMENT AT JOINT BASE CHARLESTON,
SOUTH CAROLINA**



**U.S. Army Corps of Engineers
Savannah District
and
U.S. Air Force Civil Engineer Center**

January 2023

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DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

TABLE OF CONTENTS

	Page
1.0 PURPOSE AND NEED FOR THE ACTION.....	1-1
1.1 Introduction.....	1-1
1.2 Project Location and Background	1-2
1.3 Purpose and Need for the Action	1-3
1.4 Regulatory Framework	1-4
1.5 Decisions to be Made	1-12
1.6 Cooperating Agency and Intergovernmental Coordination/Consultation	1-12
1.6.1 Cooperating Agencies	1-12
1.6.2 Interagency and Intergovernmental Coordination and Consultation.....	1-12
1.6.3 Public and Agency Review of Draft EA.....	1-13
1.6.4 Government to Government Consultations.....	1-14
2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES.....	2-1
2.1 Proposed Action	2-1
2.1.1 NPTU Simulation Expansion: New Training Facility	2-1
2.1.2 NPTU Simulation Expansion: Substation.....	2-4
2.1.3 NPTU Simulation Expansion: Old Tom Road Causeway Improvements	2-5
2.1.4 Laser Test Ranges.....	2-6
2.1.5 Goose Creek Floating Dock	2-7
2.1.6 Pier Edwards Demolition	2-8
2.1.7 Pier Bravo Demolition	2-8
2.1.8 Quarter A Dock Repairs	2-9
2.1.9 Natural Resources Facilities.....	2-9
2.1.10 Sewer Lift Stations	2-10
2.1.11 Water Distribution System.....	2-10
2.1.12 Civil Engineering Complex: Shop.....	2-11
2.1.13 Civil Engineering Complex: Entomology Facility.....	2-12
2.1.14 Military Working Dog Complex	2-13
2.1.15 Car Wash Demolition	2-13
2.1.16 Forward Area Refueling Point	2-14
2.1.17 Ambulatory Care Center.....	2-14
2.1.18 Water Tower #2 Demolition.....	2-15
2.1.19 Fire and Rescue Station.....	2-15
2.1.20 Runway Resurfacing	2-16
2.1.21 Parking Ramp Repairs	2-17
2.1.22 Hydrant Pits	2-18
2.1.23 Cargo Laydown Area	2-18
2.1.24 Munitions Facilities.....	2-19
2.1.25 HAZMAT Load and Unload Facility	2-19

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Introduction

Installation Development
Joint Base Charleston, South Carolina

2.1.26	Dormitory Demolition.....	2-20
2.1.27	NAAF Fire Station Addition	2-20
2.2	Selection Standards.....	2-21
2.3	Screening of Alternatives	2-22
2.4	Alternatives Considered but Not Carried Forward for Detailed Analysis.....	2-22
2.4.1	NPTU Simulation Expansion: Substation – Munitions Area	2-22
2.4.2	NPTU Simulation Expansion: Old Tom Road	2-22
2.4.3	Laser Test Ranges.....	2-22
2.4.4	Natural Resources Storage Facility	2-23
2.4.5	Civil Engineering Complex: Entomology Facility Additions/Repairs	2-23
2.4.6	Munitions Facilities and HAZMAT Load and Unload Facility	2-23
3.0	REFERENCES.....	3-1

LIST OF TABLES

Table 1-1: Purpose and Need

LIST OF FIGURES

- Figure 1-1: Installation Locations
- Figure 1-2: Proposed Action Locations
- Figure 2-1: NPTU Simulation Expansion
- Figure 2-2: Laser Test Ranges
- Figure 2-3: Weapons Station Waterfront Proposed Actions
- Figure 2-4: Natural Resources Storage Facility
- Figure 2-5: Sewer Lift Stations
- Figure 2-6: Water Distribution System
- Figure 2-7: JBC-AB North
- Figure 2-8: Military Working Dog Complex
- Figure 2-9: Ambulatory Care Center
- Figure 2-10: Flightline Proposed Actions
- Figure 2-11: JBC-AB South Area
- Figure 2-12: NAAF Fire Station

LIST OF APPENDICES

- Appendix A: Figures
- Appendix B: Agency Correspondence

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Introduction

Installation Development
Joint Base Charleston, South Carolina

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

628 ABW	628th Air Base Wing
628 CES	628th Civil Engineer Squadron
AMC	Air Mobility Command
ASLAC	Army Strategic Logistics Activity Charleston
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
°	Degrees
DIPC	Dental Instrument Processing Center
DoD	Department of Defense
DOPAA	Description of Proposed Action and Alternatives
EA	Environmental Assessment
ECM	Earth Covered Magazine
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
FARP	Forward Area Refueling Point
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FR	Federal Register
FSO	Free Space Optics
ft	Feet
HAZMAT	Hazardous Materials
HVAC	Heating, Ventilation, and Air Conditioning
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
IM/IT	Information Management/Information Technology
in	Inch
JBC	Joint Base Charleston
JBC-AB	Joint Base Charleston-Air Base
JBC-WS	Joint Base Charleston-Weapons Station
km	Kilometer
kV	Kilovolt
lf	Lineal Feet
LTR	Laser Test Range
m	Meter
MILCON	Military Construction
MTS	Moored Training Ship
MWD	Military Working Dog
NAAF	North Auxiliary Airfield
NAVFAC	Naval Facilities Engineering Systems Command
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NIWC	Naval Information Warfare Center

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Introduction

Installation Development
Joint Base Charleston, South Carolina

NNPTC	Naval Nuclear Power Training Command
NPTU	Nuclear Propulsion Training Unit
NRP	Natural and Cultural Resources Program
PPTT	Propulsion Plant Team Trainers
PVC	Polyvinyl Chloride
SAUSR	Small Autonomous Unmanned Systems Research
sf	Square Feet
SLS	Sewage Lift Station
sm	Square Meter
UFC	Unified Facilities Criteria
UL	Underwriters' Laboratories
USAF	United States Air Force
U.S.C.	United States Code
USMC	United States Marine Corps
USN	United States Navy

1.0 PURPOSE AND NEED FOR THE ACTION

1.1 INTRODUCTION

This Description of the Proposed Action and Alternatives (DOPAA) intends to address the Proposed Action of implementing selected installation development projects on approximately 125 acres of installation property.

The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321–4347) is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions before those actions are taken. The intent of NEPA is to help decision-makers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ), which was charged with developing implementing regulations and ensuring federal agency compliance with NEPA. The CEQ regulations mandate that all federal agencies use a prescribed structured approach to environmental impact analysis. This approach also requires federal agencies to use an interdisciplinary and systematic approach in their decision-making process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

The process for implementing NEPA is codified in the President's CEQ Regulations Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508). The September 14, 2020, version of CEQ NEPA rules is being used (85 Federal Register [FR] 43304-43376, as modified) by the CEQ NEPA Implementing Regulations Revisions Final Rule that became effective May 20, 2022, which directs federal agencies on how to implement the provisions of NEPA. The Naval Nuclear Propulsion Training Unit (NPTU) Simulation Expansion Project would be funded with a Navy Military Construction (MILCON), so the United States Navy (USN) is included as a cooperating agency. Therefore, this DOPAA conforms to both USN and United States Air Force (USAF) NEPA processes. This DOPAA has also been prepared pursuant to CEQ regulations, as defined in 32 CFR § 775 (USN) and 32 CFR § 989 (USAF) procedures and directives, which document the USN and USAF internal operating instructions on how they implement the provisions of the NEPA.

The CEQ was established to implement and oversee federal policy in this process. The CEQ regulations specify that an Environmental Assessment (EA) must be prepared to provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI) or Finding of No Practicable Alternative (FONPA), where a FONPA is appropriate (see **Section 1.5**), or whether the preparation of an Environmental Impact Statement (EIS) is necessary.

To comply with NEPA, USAF Environmental Impact Analysis Process (EIAP) (32 CFR § 989) requirements, and other pertinent environmental requirements, the decision-making process must include the development of a DOPAA to address the environmental issues related to the Proposed Action. The DOPAA will be incorporated as the first two chapters of the EA.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Project Location and Background

Installation Development
Joint Base Charleston, South Carolina

1.2 PROJECT LOCATION AND BACKGROUND

Joint Base Charleston (JBC) is supported by the USAF host unit, the 628th Air Base Wing (628 ABW), Air Mobility Command (AMC). JBC consists of three primary installations: JBC-Air Base (JBC-AB), JBC-Weapons Station (JBC-WS), and the North Auxiliary Airfield (NAAF) (**Figure 1-1**). With more than 53 tenants, JBC is composed of Department of Homeland Security and USAF, USN, United States Army, United States Marine Corps (USMC), United States Coast Guard (USCG), and other Department of Defense (DoD) missions. JBC serves more than 79,000 personnel, including active-duty and reserve military members, civilian government employees and contractors, military family members, and retirees.

The 628th Civil Engineer Squadron (628 CES), a subordinate unit within the 628 ABW, is responsible for directing design, construction, maintenance, and repair activities on 2.6 billion dollars of base facility and infrastructure systems. Responsibilities cover 6,500 acres, 5 million square feet (sf) of floor space and 3.7 million square yards of pavement. The 628 CES provides base fire protection services, base disaster preparedness support, comprehensive environmental management services, and direct explosive ordnance disposal for local and worldwide DoD and Presidential support requirements. The 628 CES also provides full spectrum infrastructure and fire protection support to the NAAF training complex.

The three component installation properties are described in detail below:

Air Base

JBC-AB is located within the City of North Charleston in Charleston County, approximately 10 miles northwest of the City of Charleston (**Figure 1-2**). JBC-AB is a 3,733-acre USAF base under the command and control of the AMC. Units associated with the 628 ABW at JBC-AB include 13 squadrons, 2 groups, and 1 wing staff directorate. Tenants at JBC include the 437th Airlift Wing, the 315th Airlift Wing of the Air Force Reserve Command, 1st Combat Camera Squadron; USAF Office of Special Investigations; and the 373rd Training Squadron, Air Education Training Command.

The 628 ABW provides installation support to 53 DoD and Federal agencies, servicing a total force of over 79,000 Airmen, Sailors, Soldiers, Marines, Coast Guardsmen, civilians, dependents and retirees on JBC-AB and JBC-WS. The 628 ABW maintains \$2.0 billion of physical infrastructure across 23,000 non-contiguous acres in order to provide mission-ready expeditionary Airmen to combatant commanders in support of joint and combined operations.

The 628 ABW provides support for JBC's joint-use airfield, sharing two 9000 and 7000 feet (ft) long intersecting runways with Charleston International Airport. The base maintains the two runways and most of the taxiways, and security and crash rescue response for all flights.

Weapons Station

JBC-WS is located on the west bank of the Cooper River in Berkeley and Charleston Counties, approximately 10 miles upriver from the City of Charleston (**Figure 1-2**). It consists of four major land tracts totaling 16,307 acres. JBC-WS contains more than 40 tenant commands, including many training commands and units such as the Naval Nuclear Propulsion Training Command

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Purpose and Need for the Action

Installation Development
Joint Base Charleston, South Carolina

(NNPTC) and NPTU; Naval Consolidated Brig, Charleston; Mobile Mine Assembly Unit; Explosive Ordnance Detachments; USMC Reserve Center; and the Naval Information Warfare Center (NIWC) Atlantic. It also serves as a United States Army logistics hub.

As stated in Title 10 U.S.C. 5061, the USN's mission is to maintain, train and equip a combat-ready Naval force to win wars, deter aggression, and maintain freedom of the seas. To meet this mission, the USN needs highly qualified personnel to operate its nuclear-powered fleet. It is NPTU's mission to provide prospective Naval nuclear propulsion plant operators and officers with training and certification in the actual, hands-on operation of a nuclear propulsion plant. Current training at NPTU consists of six months of practical instruction on a combination of operating Naval nuclear reactor plants and Engine Room Team Trainers, under strict supervision of qualified USN, civilian, and other government personnel. The current onshore NPTU training facility consists of three Training Support Buildings; a security access building; and parking lots. Along the shore of the Cooper River, the training facility includes two piers with Moored Training Ships (MTS) and various support barges. The Natural and Cultural Resources Program (NRP) at JBC manages the aquatic environment in these areas, ensuring avoidance and minimization of impacts to federally listed species such as manatees and sea turtles.

North Auxiliary Airfield

The NAAF is located 85 miles northwest of JBC-AB and 3 miles east-southeast of the Town of North, South Carolina, in Orangeburg County (**Figure 1-2**). The 2,400-acre property contains one 10,000 ft and one 3,500 ft long runway used by multiple installations for C-17 Globemaster III aircrew training. The NAAF's isolated location provides low light pollution, making the airfield ideal for night assault and training operations. The only permanently assigned personnel at the NAAF include 12 firefighters, 4 Landing Zone Safety Officers, and 2 civilian groundskeepers assigned to the on-site fire station and air traffic control tower. Personnel from JBC-AB are assigned temporary duty positions for air traffic control and air-dropped pallet recovery.

The NAAF is used by aircrews from JBC and other military installations to practice takeoffs, landings, and airdrop operations at drop zones on the airfield. Aircraft are not permanently based at NAAF; however, aircraft based at JBC-AB conduct operations at NAAF on a regular basis.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose for the Proposed Action is to meet current and future mission requirements and national security objectives associated with JBC. The Proposed Action is needed to address facilities and infrastructure that are not meeting the requirements and objectives necessary to support JBC missions.

The Proposed Action would meet ongoing mission requirements associated with improving the efficiency and effectiveness of forces by enhancing their ability to expand; replacing older, substandard facilities with new buildings; and providing reliable utilities to support JBC. Continued development of infrastructure at JBC must consider future facilities construction, demolition, renovation, transportation needs, airfield alterations and enhancements, utilities improvements, land use planning, energy requirements, and development constraints and opportunities (**Table 1-1**).

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Regulatory Framework

Installation Development
Joint Base Charleston, South Carolina

Contributions by JBC to national security, as well as prospects for the assignment of additional missions in the future, dictate that the installation implement planning for the next 5 fiscal years. To ensure readiness at the installation for any tasks assigned, projects must consider, and be capable of supporting, all functions inherent to the installation. These include operations and maintenance activities, security, administration, communications, billeting, supply and storage, training, transportation, and community quality of life.

Individual purpose and need statements for proposed projects are provided in **Table 1-1**.

1.4 REGULATORY FRAMEWORK

The relevant policies, laws, and regulations applicable to this EA are summarized below.

- NEPA of 1969 [42 U.S.C. §§ 102(2)(c)], which requires that all agencies of the federal Government prepare a detailed statement for major federal actions significantly affecting the quality of the human environment. The detailed statement is to include the environmental impact of the proposed action, any adverse environmental effects that cannot be avoided, alternatives to the proposed action, statements assessing the environmental impact of the action and alternatives. These statements are commonly referred to as EIS and EA.
- CEQ Regulations (40 CFR Parts 1500-1508, September 14, 2020, 85 FR 43304-43376), which implement the requirements of NEPA.
- USAF regulations for implementing NEPA (32 CFR part 989), Environmental Impact Analysis Process
- USN regulations for implementing NEPA (32 CFR Part 775), Policies and Responsibilities for Implementation of the NEPA Within the Department of the Navy, published in the FR on 20 August 1990
- Occupational Health and Safety Act (OSHA), which outlines occupational health and safety regulations.
- Executive Order (EO) 11988, Floodplain Management (24 May 1977)
- EO 11990, Protection of Wetlands (24 May 1977)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (11 February 1994)
- EO 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input (30 January 2015)
- EO 13990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (20 January 2021)
- EO 14008, Tackling the Climate Crisis at Home and Abroad (27 Jan 2021)
- EO 14057, Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (13 December 2021)
- EO 13186, Responsibilities of Federal Agencies To Protect Migratory Birds (66 FR 3853) (10 Jan 2001)
- Clean Water Act (CWA), 33 U.S.C. §§ 1251-1387
- Clean Air Act (CAA), as amended, 42 U.S.C. §§ 7401-7671q, including 1990 General Conformity Rule
- Coastal Zone Management Act of 1972 (CZMA), 16 U.S.C. 1451 et seq.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Regulatory Framework**

**Installation Development
Joint Base Charleston, South Carolina**

-
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 et seq., which outlines the use and distribution of plant regulators and defoliant
 - Migratory Bird Treaty Act of 1918 (MBTA), 16 U.S.C. §§ 703-712 et seq.
 - Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. §§ 668-668d
 - Endangered Species Act (ESA) of 1973, as amended (7 U.S.C. §§ 136; 16 U.S.C. §§ 1531 et seq.)
 - Marine Mammal Protection Act (MMPA) of 1972, as amended (16 U.S.C. §§ 1361 et seq.)
 - Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976, as amended (16 U.S.C. §§ 1801 et seq.)
 - National Historic Preservation Act (NHPA) (54 U.S.C. 300101 et seq.)
 - Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6992k
 - 40 CFR Parts 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, published in the FR on 19 May 1980.
 - 40 CFR Parts 270, United States Environmental Protection Agency (USEPA) Administered Permit Programs: the Hazardous Waste Permit Program, published in the FR on 1 April 1983.
 - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601-9675

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Table 1-1: Purpose and Need

Proposed Action Component	Location	Purpose	Need
NPTU Simulation Expansion: New Training Facility	JBC-WS	USN is moving away from using MTS containing critical reactor plants for training altogether. Whole plant simulators would replace two SSN 688 Class MTS and associated SSN 688-specific trainers which would reach their end-of-life in the late 2030s. Future major training assets (whole plant simulators) used by the USN would be Propulsion Plant Team Trainers (PPTT); whole plant simulators replicate the aft end of a submarine and would replace the training capacity currently provided by MTS. The new PPTT would offer advantages in terms of lower cost, reduced environmental risk, and improved training efficiency. These simulators are required to be contained within high bays with adjacent training, office, and support spaces.	The proposed action is needed because there are no available high bays of sufficient size at the NPTU Existing Site to contain the simulators. In addition, the NPTU Existing Site is encumbered by blast arcs from nearby Wharf Alpha which introduces added construction cost and complexity to operations that can be avoided by using the proposed location to build the high bays. The NPTU Existing Site is also surrounded by wetlands which would be impacted if any additional facilities were constructed at this location. Additional space is also required at the new NPTU training facility to support operations and maintenance of the PPTT as well as provide student training areas and office space. The proposed action would ensure that NPTU's mission of providing highly qualified nuclear operators and supervisors for the Naval nuclear-powered fleet can continue in an all-simulation training environment. NPTU's mission is to provide enough trained and certified operators to meet the Fleet's Naval nuclear operator manning requirements. If NPTU does not meet this mission requirement, then nuclear-powered warships will not be sufficiently staffed with trained reactor plant operators and officers to perform missions vital to national security.
NPTU Simulation Expansion: Substation	JBC-WS	Facility resiliency requirements for mission essential facilities like the NPTU simulation expansion facility require redundant electrical feeds from different sources. There is currently only one viable substation on JBC-WS that can be used by the NPTU simulation expansion facility. A new electrical substation near the proposed NPTU simulation expansion facility would provide new and dedicated electrical gear to meet mission essential facility requirements and better support the NPTU simulation expansion facilities service life of 50 or more years.	The proposed action would provide a dedicated and redundant power supply from the utility to the new training facility to minimize the risk of power outages caused by loads/distribution systems not associated with the facility. Of the two nearby substations that could potentially support the NPTU simulation expansion facility, one does not have sufficient spare capacity and the other has aging equipment and would be used as the required redundant power source. New gear and distribution lines would provide the most reliable source of power for the NPTU Expansion Site to minimize training and operational interruptions.
NPTU Simulation Expansion: Old Tom Road Causeway Improvements	JBC-WS	Old Tom Road serves as the direct vehicular connection between the NPTU existing site and the NPTU simulation expansion facility. It also serves as one of the two vehicular access routes to the NPTU existing site. With the addition of the	The proposed action would improve access and egress to and from the existing NPTU facility. Tidal flooding along the causeway is recurring throughout the year resulting in hazardous transit and occasional road closure. The frequency of tidal flooding is expected to increase with time and will lead to longer road closures in the

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Proposed Action Component	Location	Purpose	Need
		NPTU simulation expansion facility the relationship between the two training locations would increase the vehicle and non-vehicular traffic due to future training and operational program requirements. Approximately 500 ft of this roadway that is subject to regular tidal flooding is proposed to be widened and elevated. This improvement, along with the construction of a multi-purpose pathway, would provide a safer and more reliable connection between the two NPTU training locations.	future. Additionally, the current causeway road is narrow with no pedestrian / cycling path or shoulder. The addition of the new NPTU simulation expansion facility increases the importance of maintaining a safely traversable connection between the two training locations.
Laser Test Ranges	JBC-WS	To construct two laser test ranges (LTRs) in support of upcoming requirements from the USMC and USN.	To address NIWC Atlantic gaps in Free Space Optics (FSO) and test range capabilities. With increasing interest and near-term use of optics/laser technology within USMC/USN systems, the NIWC Atlantic must position to become experts in FSO communications systems by obtaining, improving, and retaining the knowledge, skills, and abilities and tools/equipment needed to safely conduct systems analysis, engineering, and evaluation of these optics/laser-based systems. Two ranges are required to simulate FSO in both land based and ship to ship environments.
Goose Creek Floating Dock	JBC-WS	To construct a floating dock adjacent to the Goose Creek Boatshed (Bldg. 3127) serving as an access point for vessel launching and recovery at the nearby boat ramp.	To address limited mooring options and meet United States Army Corps of Engineers (USACE) vessel mooring requirements. Commercial mooring options are very limited in the Upper Cooper River.
Pier Edwards Demolition	JBC-WS	To demolish the fishing pier and repair the police/security dock timber deck planks at the Pier Edwards facility	The existing fishing pier has been condemned and closed by JBC safety personnel. The police/security dock needs intermittent repairs to ensure safe operation. The proposed action is needed to reduce disproportionate investment of dwindling operations and maintenance account resources, and to increase the safety of the existing police/security dock.
Pier Bravo Demolition	JBC-WS	To demolish Pier Bravo at JBC-WS. Demolition processes may involve floating barges, cranes, and hazardous materials disposal as applicable.	Pier Bravo was previously used to moor large vessels no longer operated from JBC. The proposed action is needed to remove damaged infrastructure that no longer serves a mission requirement.
Quarter A Dock Repairs	JBC-WS	To repair deteriorated concrete guide piles, timber cross bracing, corroded pile cap connection hardware, and guide pile assemblies at the Quarter A Dock.	The current condition of the dock requires operational restrictions. If repairs are not performed, it is likely that all lateral loading at this facility will be prohibited within the next 5 years. The proposed action

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Proposed Action Component	Location	Purpose	Need
			is needed to ensure continual and safe operation of the dock at the designed capacity.
Natural Resources Facilities	JBC-WS	To construct a new administration facility, new Forestry/Wildland/Maintenance facility, a covered storage facility for NRP vehicles and equipment, and extend the site boundaries of the existing compound to accommodate the new buildings.	To address inadequate facility maintenance and readiness. NRP program personnel have tripled since the facility was first constructed in 1996. The NRP currently supports six staff with 32 pieces of mission critical equipment/vehicles. The storage facility is over capacity, leading to increased building wear and decreased personnel efficiency.
Sewer Lift Stations	JBC-WS	To repair and replace five dry well sewage lift stations (SLS) at JBC-WS with new wet well sewage lift stations.	The existing SLS are integral to waste management at JBC-WS. The proposed action is needed to upgrade current facilities with modern equipment to provide reliable waste management infrastructure.
Water Distribution System	JBC-WS	To replace asbestos concrete, cast iron, and Polyvinyl chloride (PVC) piping in three distinct areas (North, Central, and East) within JBC-WS. 45,000 lineal feet (lf) would be replaced in the north area, 28,500 lf central area, and 21,597 lf of water mains and install 32 fire hydrants in the eastern area of JBC-WS.	The proposed action is needed to improve the reliability of service, maintain the operational capacity, and minimize costly emergency repairs. Infrastructure in the project area has exceeded its service life and degradation of the distribution system has resulted in costly annual operations and maintenance. Additionally, JBC needs new water distribution mains in the Army Strategic Logistics Activity Charleston (ASLAC) and Federal Law Enforcement Training Center (FLETC) areas to support drinking water, firefighting, and mission support capabilities such as vehicle maintenance.
Civil Engineering Complex: Shop	JBC-AB	To consolidate Civil Engineer Maintenance Shops by demolishing twelve existing structures and constructing six new facilities. The proposed action would consolidate the Civil Engineer Maintenance Shops and storage facilities with the administration, engineering, operations, and readiness functions to create a modern, conveniently located, and properly configured multi-facility complex.	Substandard, inefficient, and geographically separated shop facilities hinder productivity and effectiveness in providing facility and infrastructure maintenance. Retaining energy inefficient, substandard, and obsolete facilities requires a disproportionate investment of dwindling operations and maintenance account resources. The proposed action is needed to strengthen the civil engineer function to maximize potential to meet future diverse mission requirements as a vital inter-theater airlift hub.
Civil Engineering Complex: Entomology Facility	JBC-AB	To replace the deteriorated and unsafe existing Entomology Facility (Bldg. 717) by constructing a new facility within the proposed Civil Engineering Complex area.	Substandard facility hinders effectiveness of providing pest and wildlife control needed to ensure availability of JBC as a vital inter-theater airlift hub. The current Entomology Shop is also within the 7:1 Lateral Glide Slope to Runway 15. Presence of mold is a health hazard to personnel, and the proximity to other facilities is a danger to those facilities. The inadequate and inefficient facility is hindering productivity. The proposed action is needed because the risks to

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Proposed Action Component	Location	Purpose	Need
			health, comfort of personnel, and safety of the building will not be addressed without providing a new facility.
Military Working Dog Complex	JBC-AB	To install a new kennel and obedience course in the existing Military Working Dog (MWD) Complex.	To increase the operations readiness of the 628th Security Forces Squadron MWDs and handlers. MWDs are critical assets in explosive and narcotics detection missions. The current kennel and obedience course have inadequate space to house and train MWDs. The improved training and kennel facilities would ensure the readiness of JBC MWDs to meet current mission needs.
Car Wash Demolition	JBC-WS	To demolish the existing car wash (Bldg. 630) at JBC-WS.	The proposed action is needed to reduce disproportionate investment of dwindling operations and maintenance account resources. There is no existing demand for a car wash facility located on JBC-AB due to availability of similar facilities within close proximity to the air station. The facility is no longer in use and no plans are in place to establish future use.
Forward Area Refueling Point (FARP)		To construct a single-story building (Bldg. 685) to provide support for AMC's sole Air Force Special Operations Command (AFSOC) Forward Area Refueling Point (FARP) personnel and equipment.	To expand current facility to meet Air Force Manual (AFMAN) 32-1084 recommended gross area guidelines. The proposed action is needed because the current building is insufficient to house AMC's Forward Area Refueling team or perform all required FARP functions of equipment storage, equipment maintenance area, and bench stock storage. The maintenance bay insufficient and CONEX storage units have been brought to temporarily assist with the storage issue. Two Forward Area Manifold carts are stored outside in the elements and outside JBC's span of control due to the insufficient storage and maintenance space. This creates daily maintenance problems affecting mission readiness for the JBC's FARP team.
Ambulatory Care Center	JBC-AB	To demolish and replace Bldg. 1000 with a new education and training facility, construct an addition to Bldg. 1001, relocate the Mental Health clinic into the existing Medical/Dental Clinic (Bldg. 364), and relocate Logistics and Facility Management into the Medical Warehouse (Bldg. 1001).	To optimize the efficiency of clinical and logistics operations and reduce facility footprint and associated operations costs caused by deteriorating building infrastructure. The main facility of the Ambulatory Care Center's Medical/Dental Clinic (Bldg. 364) is a two-story 75,000 sf facility built in 1987. The building's infrastructure is deteriorating and at the end of its useful life.
Water Tower #2 Demolition	JBC-AB	To demolish Water Tower #2 (Bldg. 84104) at JBC-AB.	The sole purpose of Water Tower #2 supports cellular antennas that were installed as part of a lease arrangement with cell phone service providers. This lease has since expired, and therefore the water tower is no longer needed. The proposed action is needed to avoid

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Proposed Action Component	Location	Purpose	Need
			eliminate unnecessary refurbishment/maintenance costs estimated at \$800,000.
Fire and Rescue Station	JBC-AB	To demolish buildings 168 and 161 and replace with a new one and two-story Fire and Rescue Station. The new facility would include vehicle apparatus bays, maintenance and support functions, equipment storage, emergency dispatch, administrative and training/classroom areas, mechanical, electrical, communication spaces, and residential support spaces.	The Proposed Action is needed to remedy a spatial shortage, as there is currently not enough space to meet the needs of the fire fighters and staff. The acute lack of station storage areas also required that two fire truck bays be converted into storage for essential emergency Weapons of Mass Destruction/Hazardous Materials (HAZMAT) related equipment. The flat roof on the facility is a continuing maintenance problem, and the facility lighting, office areas, and bathrooms are inadequate. The Heating, Ventilation, and Air Conditioning (HVAC) system is outmoded, inefficient, and does not provide proper comfort levels in the station crew rest quarters. The quarters and personal item storage lockers are not in compliance with current standards of space, livability, or security; their location in the building is in violation of the National Fire Protection Association (NFPA) 1500 Safety and Health Program due to their proximity and associated exposure to the known carcinogen of diesel engine exhaust fumes. There are unsafe sleeping and working conditions for all personnel in the fire station. The building does not meet minimum hurricane or seismic protection standards. The structural integrity of the facility has been weakened by earthquakes which have created numerous cracks in the walls and floor.
Runway Resurfacing	JBC-AB	To address signs of concrete deterioration by repairing concrete at the intersection of runways 03/21 and 15/33 at JBC-AB.	To provide serviceable runway pavement for military and civilian airport missions. The pavement is exhibiting widespread map cracking, with some spalling and spall repairs. At 25 years old, the pavement has reached its design life. Not moving to complete repairs may lead in increased foreign object debris occurrences, increased cracking and spalling until eventual life-safety issues occur.
Parking Ramp Repairs	JBC-AB	To repair the main aircraft parking ramp, spots 16 through 34 and 60 Row, to address asphalt and concrete deterioration.	To ensure availability of 437th Airlift Wing and 315th Airlift Reserve Wing aircraft parking spots on JBC-AB through asphalt and concrete repair in parking areas and taxi lanes. If repairs are not conducted, many parking spots will need to be closed if ramp is not repaired.
Hydrant Pits	JBC-AB	To construct five hydrant fuel pits at aircraft parking spots 60-64 on the JBC-AB flightline.	The existing parking spots fuel aircraft via truck, not fuel hydrants as with other parking areas. The proposed action is needed to reduce operational inefficiencies resulting from the current fueling method.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Purpose and Need**

**Installation Development
Joint Base Charleston, South Carolina**

Proposed Action Component	Location	Purpose	Need
Cargo Laydown Area	JBC-AB	To construct approximately 60,000 sf of new asphalt pavement for a cargo laydown area on the southwest side of the airfield at JBC-AB.	Current cargo laydown areas are experiencing shared space use conflicts and double handling, utilizing aircraft parking spots 33 and 35 for storage. The proposed action is needed to increase operational efficiency by providing a designated accessible laydown area for the storage of palletized supplies/equipment.
Munitions Facilities	JBC-AB	To remove and replace the deteriorated Buildings 2194 and 2196 and replace with an updated Earth Covered Magazine (ECM) munitions facility. The new facility would include lighting and electrical support, mechanical systems, intrusion detections systems and all necessary support systems for a complete and usable facility.	Buildings 2194 and 2196 are past their service life and have deteriorated through years of use and disrepair. No formal repairs have been performed since the building's construction. The proposed action is needed to enhance security of both the munitions magazines and the base itself. Constructing new modern earth style bunkers would increase the net explosive weight of the explosives on base and would decrease the blast arc. Building updates would also prevent alarm malfunctions that close gates on base during the constant/ongoing repairs of the existing facilities.
HAZMAT Load and Unload Facility	JBC-AB	To repair the deteriorated load/unload dock portion of Bldg. 2190 through construction of new office space, bathroom, breakroom, and the canopy over the loading dock, and make repairs/upgrades to concrete loading dock as required.	Building 2190 is past its service life and has deteriorated through years of use and disrepair. No formal repairs have been performed since the building's construction. The proposed action is needed to reduce disproportionate investment of dwindling operations and maintenance account resources.
Dormitory Demolition	JBC-AB	To demolish the degrading Bldg. 246 Dormitory.	The building's infrastructure is deteriorating and at the end of its useful life. The proposed action is needed to reduce disproportionate investment of dwindling operations and maintenance account resources.
NAAF Fire Station Addition	NAAF	To construct an addition to JBC Fire Department Station 3 (Bldg. 168) at North Auxiliary Airfield to provide a safer operations environment for personnel and prolong the lifespan of equipment.	Freeing up space in the existing vehicle stalls would clear crush zones and allow for safe operation and backing of vehicles within the stalls. Additional storage would also allow for specialized firefighting and wildland equipment, agent, and gear to be stored in a controlled area away from environmental factors that could degrade the effectiveness and longevity of these items.

1.5 DECISIONS TO BE MADE

The decision to be made is the selection of an alternative for JBC to support the proposed installation developments at the base. This EA evaluates the potential environmental consequences of implementing the proposed actions as described in **Section 2.0**.

Based on the analyses conducted in support of this EA, the USAF will make one of three decisions regarding the proposed action:

1. Choose the alternative action that best meets the purpose of and need for this project and sign a FONSI and/or FONPA, allowing implementation of the selected alternative;
2. Initiate preparation of an EIS if it is determined that significant impacts would occur as a result of implementation of the action alternatives; or
3. Select the no-action alternative, whereby the proposed action would not be implemented. As required by NEPA and its implementing regulations established by CEQ, preparation of an environmental document must precede final decisions regarding a federal action and be available to inform decision-makers of the potential environmental impacts. JBC can also defer a decision and not pick any of the alternatives, in which case a FONSI would not be signed.

1.6 COOPERATING AGENCY AND INTERGOVERNMENTAL COORDINATION/CONSULTATION

1.6.1 Cooperating Agencies

Given the role of the 628 CES as the host unit responsible for facilities maintenance and long-range planning at JBC, the USAF will retain responsibility as the Lead Agency for this EA pursuant to 40 CFR Part 1501.7, Lead Agencies. The USN will serve as a cooperating agency, as the installation is a Joint Base.

1.6.2 Interagency and Intergovernmental Coordination and Consultation

NEPA ensures that environmental information is made available to the public during the decision-making process and prior to actions being taken. The premise of NEPA is that the quality of federal decisions will be enhanced if proponents provide information on their actions to state and local governments and the public and involve them in the planning process. The Intergovernmental Coordination Act and EO 12372, Intergovernmental Review of Federal Programs, require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. USAF Instruction 32-7060, Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), requires the USAF to implement the IICEP process, which is used to facilitate agency coordination and to implement scoping requirements under NEPA.

Because the Proposed Action area is nearby the 100-year floodplains, it is recommended by the Federal Emergency Management Agency (FEMA) 2015 Guidelines for Implementing EO 11988 and EO 13690 to follow the requirements of EO 11988. The USAF will publish early notice (i.e., at least 30 days prior to the release of the Draft EA) that the Proposed Actions would occur near a floodplain in *The Post and Courier* in Charleston, South Carolina. The comment period for

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment

Installation Development

Cooperating Agency and Intergovernmental Coordination/Consultation Joint Base Charleston, South Carolina

public and agency input on these projects will last for 30 days following publication. The notice will identify state and federal regulatory agencies with special expertise that have been contacted and solicited public comment on the Proposed Actions and any practicable alternatives.

A Notice of Availability (NOA) for the Draft EA and FONSI, including a FONPA, will be published in *The Post and Courier* in Charleston, South Carolina. Copies of the Draft EA and unsigned Draft FONSI/FONPA will be made available at the Dorchester Road Regional Library in North Charleston, South Carolina and the JBC-WS Branch Library in Goose Creek, South Carolina. These documents will also be made available on the internet at the JBC environmental website. At the same time, copies of the Draft EA and FONSI/FONPA will be distributed to federal, state, and local agencies and applicable Federally recognized Native American Tribes. Government to government consultation will be conducted with Federally recognized Native American Tribes. Copies will also be provided to any other individuals or organizations upon request during the public review period. Applicable and relevant comments received will be addressed in the Final EA.

The Native American tribal governments that will be consulted with regarding this action are listed below.

- Absentee-Shawnee Tribe of Oklahoma
- Catawba Indian Nation
- Chickasaw Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Muskogee (Creek) Nation
- United Keetoowah Band of Cherokee
- Alabama-Quassarte Tribal Town
- Kialegee Tribal Town
- Miccosukee Tribe of Indians
- Poarch Band of Creek Indians
- Seminole Nation of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Seminole Tribe of Florida

1.6.3 Public and Agency Review of Draft EA

Publication of the NOA will initiate a 30-day public review period. JBC will send the EA to relevant federal, state, local agencies, and federally recognized tribes. Agencies will be given an opportunity to provide comments or information concerning the Proposed Action for 30 days during this initial scoping period. **Appendix B** includes the scoping letter distribution list for federal, state, and local agencies, cognizant representatives affiliated with those agencies, and political leaders from the surrounding towns and municipalities to be contacted regarding the proposed action.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment

Installation Development

Cooperating Agency and Intergovernmental Coordination/Consultation Joint Base Charleston, South Carolina

1.6.4 Government to Government Consultations

EO 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. To comply with legal mandates, federally recognized tribes that are affiliated historically with the JBC geographic region were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the IICEP processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The JBC point-of-contact for Native American tribes is the Installation Commander. The JBC point-of-contact for consultation with the Tribal Historic Preservation Officer and the Advisory Council on Historic Preservation is the Cultural Resources Manager.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and Alternatives. CEQ Regulations for implementing the Procedural Provisions of NEPA (Title 40 CFR Parts 1500–1508) specify that an EA must include a No-Action Alternative against which potential impacts can be compared. The USAF EIAP, codified at 32 CFR Part 989.8, and USN, 32 CFR Part 775 also requires consideration of the No-Action Alternative. The purpose of the No-Action Alternative is to assess any environmental consequences that may occur if the Proposed Action is not implemented.

2.1 PROPOSED ACTION

The USAF and supported component missions propose to develop several facilities on approximately 125 acres of installation property at JBC. The proposed action includes facilities and infrastructure construction, demolition, and additions/remodeling across the JBC-AB, JBC-WS, and NAAF installations. Proposed actions and their alternatives are described in **Sections 2.1.1 through 2.1.27**. The locations of all developments are detailed in **Figures 2-1 through 2-12**, located in **Appendix A**.

Demolition activities under the proposed action would include removal of facility waste, removal of hazardous waste if applicable, and utilization of heavy machinery for structure teardown. Inspections would be conducted in facilities to be demolished with a potential to contain asbestos. Removal and disposal of asbestos would be stipulated in project designs and carried out in strict compliance with all applicable federal, state, and local laws, rules, regulations, and standards.

JBC has identified independent alternatives for the proposed actions that may meet requirements for the proposed developments. The following sections provide descriptions of the alternatives.

2.1.1 NPTU Simulation Expansion: New Training Facility

The NPTU proposes to expand its simulation training footprint. Expansion of the NPTU would require additional high-bay construction housing training simulators and supporting spaces (**Figure 2-1**). The proposed facility expansion includes the following design elements:

- Approximately 70,000 sf Training Support Building
- Approximately 48,000 sf High Bay Complex (includes High Bay & Support Spaces) (2)
- Drop-off/Pick up Lanes
- 1,270 Off-Street Parking Spots (440 spots replace pre-existing)
- Stormwater Retention Pond (approximately 3.8 acres)
- North Access Drive

The NPTU will avoid constructing both high bays simultaneously. The second high bay will not be required for its intended purpose for at least seven to eight years due to the simulator delivery schedule. Additionally, due to the complexity of the design, fabrication, installation, and testing of the PPTTs, only two simulators (one high bay) can be completed within the first seven to eight years after completion of the proposed MILCON. Delaying the construction of the second high bay avoids the cost associated with maintaining a building that is not in use. This EA investigates the completed proposed NPTU facility footprint depicted in Alternatives 1 and 2 with both high bays.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The stormwater retention pond would be sized to accommodate the entire NPTU expansion site including the future high bay area. The location of the pond is based on the considerations of existing drainage patterns and is proximate to the drainage outfall in the northern area of the parcel. The pond would be located within the lowest elevations to minimize excavation cost and utilize existing topographic grades. The area to be required for stormwater retention is subject to final stormwater modeling, engineering, and state and local permitting requirements.

There are four potential locations/site layouts for the NPTU expansion facility, described as Alternatives 1 through 4 in **Sections 2.1.1.1, 2.1.1.2, 2.1.1.3, and 2.1.1.4**. These locations are based on proximity to the existing NPTU site and are required, per DoD 605509-M, to be built outside of blast arc areas at JBC-WS. A design charette was not produced for Alternatives 3 and 4, therefore no defined site plan is available, and the exact location of the new facilities has been generalized.

The New Training Facility, NPTU Substation (**Section 2.1.2**), and Old Tom Road Causeway Improvements (**Section 2.1.3**) are proposed under one MILCON. The proposed substation and causeway are ancillary projects of the New Training Facility, serving to support future NPTU mission requirements.

2.1.1.1 Alternative 1 (Preferred)

The NPTU Training Facility components described in **Section 2.1.1** would be developed in the forested parcel south of the Redbank Club and north of Old Tom Road (**Figure 2-1**). The parcel would be cleared of vegetation before construction activities. Construction would take place in two phases. The initial phase would include all mentioned facility components, utility infrastructure, storm water retention features, Red Bank Road improvements, majority of parking, and one high bay complex located north of the training support building. The next phase would include the construction of an additional high bay complex on the western side of the training support building and the remaining parking. The phased construction of the high bay complexes is necessary to avoid one of the high bays laying dormant for 7-8 years due to the planned simulator delivery and installation schedule.

The high-bay construction and supporting spaces would occupy a footprint of 24.3 acres, including 1.7 acres of wetlands (**Figure 2-1**). The buildings within this project area would be placed on the non-wetland portion of the footprint. Only the nearby stormwater retention pond and a portion of the north access drive would have wetlands impacts.

Roadway improvements along Red Bank Road would be necessary to alleviate current traffic deficiencies that may be exacerbated by increased traffic from the new facility. These improvements are shown in **Figure 2-1** and described below:

- Deceleration Lanes
Deceleration lanes are proposed to be added to the two existing roads and the two proposed roads that would provide vehicular access to the new NPTU facility from Red Bank Road.
- Old Tom Road and Red Bank Road Intersection Improvements
This intersection provides the only ingress-egress access to the current NPTU site to and from the north and south. Additionally, it is one of the major access driveways for the new

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

NPTU facility and the road serves the munitions area to the west. To improve existing intersection deficiencies and to accommodate future traffic, the following improvements are proposed:

- Dedicated right-turn lane for traffic heading north on Red Bank Road. This improvement on Old Tom Road allows traffic coming from the NPTU Existing Site to turn right (north) within a dedicated turn lane, reducing vehicular queuing.
 - North bound merge lane on Red Bank Road. This additional lane would better accommodate the northbound traffic coming from the existing NPTU site as well as traffic exiting the new NPTU facility from Old Tom Road, also heading north. The lane would allow traffic to merge onto Red Bank Road.
 - Improved pedestrian sidewalks and road crossings.
 - Other intersection improvement including pavement markings, signage, and better definition of pavement edges and parking areas around the existing fire station.
- Modifications to the Cote Bas Road Intersection with Red Bank Road
The addition of the above-described northbound merge lane on Red Bank Road would require eliminating the southerly Cote Bas roadway into the adjacent residential neighborhood. The remaining section of Cote Bas Road within the residential neighborhood would terminate at a new cul-de-sac turnaround. This modification would also require a new four-way intersection providing access to the residential neighborhood from Cote Bas Road at the existing intersection currently serving the Security Building. This roadway is proposed as one of the four access roads to the new NPTU facility.

2.1.1.2 *Alternative 2*

Under Alternative 2, the NPTU expansion facility would be sited in the same area as described in Alternative 1 but would include a 15.4 acre parcel of land south of Old Tom Road, as shown in **Figure 2-1**. As part of the decision-making process to develop the site layout in Alternative 1, studies were conducted to avoid wetland impacts. One such study determined impacts to the 1.7-acre wetland could be reduced by shifting some of the parking to the parcel of land south of Old Tom Road. A conceptual site design has been produced for this alternative which would reduce the wetland impacts from approximately 1.7 acres to 1.1 acres. Personnel would be park south of W Old Tom Road, requiring frequent transit across the road to access the expansion facility and vehicles. The development would also occur within Solid Waste Management Unit (SWMU) Site S36.

Roadway improvements required under Alternative 2 would be the same as those detailed in Alternative 1 (**Section 2.1.1.1**).

2.1.1.3 *Alternative 3*

Under Alternative 3, the NPTU expansion facility would be sited on the current Red Bank golf course (**Figure 2-1**). This location would be the closest to the current NPTU but is located partially within the blast arc. The location would also occupy over 8 acres of wetland. A significant portion of the site is located within floodplains and hurricane storm surge predictions which poses risk to the resiliency of the site operation and equipment.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.1.4 *Alternative 4*

Under Alternative 4 the NPTU expansion facility would be sited north of the NNPTC (**Figure 2-1**). The facility would be collocated with current NNPTC facilities. The transit between the current and proposed expansion is the greatest of the four action alternatives and would require passage through two security checkpoints for inter-site visits along with traffic congestion concerns on Redbank Road. This location would also occupy over 16 acres of isolated wetlands.

2.1.1.5 *No Action Alternative*

The No-Action Alternative would not construct the NPTU simulation expansion at JBC-WS. Training activities would continue to be conducted solely at the Cooper River NPTU facility. The current facilities and critical training platforms will reach End of Life in the late 2030s and failure to replace these assets will effectively shut down the NPTU student training mission and de-man the nuclear fleet. The larger size of the new PPTTs cannot be accommodated in NPTU Charleston's existing facilities. This alternative does not meet screening criteria.

2.1.2 **NPTU Simulation Expansion: Substation**

The NPTU proposes to construct a new substation to support Unified Facilities Criteria (UFC) 3-550-01 Exterior Electrical Power Distribution requirements for redundant electrical feeds for mission essential facilities. The proposed substation would tie to existing Dominion Energy 115 Kilovolt (kV) lines, providing new electrical gear to provide reliable and dedicated power to better support the NPTU Training Facility's service life of 50 or more years. In addition to benefits the new substation would provide for the new training facility, there is potential that the existing NPTU site would be connected to the new substation to serve as a primary or redundant feed to eliminate the concerns with the aging infrastructure supplying NPTU existing site. Two locations have been proposed within proximity to the proposed NPTU Training Facility (**Figure 2-1**).

The NPTU Expansion Substation would include a 7.5/10.5 Megawatt 115 kV to 13.8 kV transformer, voltage regulator, 3 switch/breakers, and power lines from the substation to the new facility. The Substation would be located in one of two locations in close proximity to the NPTU Expansion Facility, as shown in **Figure 2-1** and described below.

The two substation location alternatives are located near, but not within, 100-year floodplain and wetland areas.

2.1.2.1 *Alternative 1 (Preferred): Red Bank Road*

- Closest location to NPTU Expansion Site at approximately 1/4 mile.
- Allows easy access for Dominion Energy due to its location on the Joint Base perimeter.
- Lines could potentially be underground, which is preferred vice overhead lines for reliability.

2.1.2.2 *Alternative 2: Red Bank Road by Gate 18*

- Approximately 1 mile from to NPTU Expansion Site.
- A portion of the existing Waterfront Express Feeder distribution could be used for power distribution. Underground lines are preferred but may not be feasible.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.2.3 No Action Alternative

The No-Action Alternative would not construct the NPTU substation at JBC-WS. Current outdated electrical infrastructure would continue to be used. The redundant electrical feeds needed to meet mission essential facility requirements would not be constructed; therefore, this alternative does not meet screening criteria.

2.1.3 NPTU Simulation Expansion: Old Tom Road Causeway Improvements

The NPTU has proposed modifications to the existing causeway just north of the current NPTU parking areas (**Figure 2-1**). A section of Old Tom Road crosses between a tidal pond and the Cooper River at this approximately 500 ft long causeway. These two bodies of water are connected by a culvert which the causeway passes over and water flow is managed by a weir system. This causeway allows for entry from, and exit to, the northern section of JBC-WS and facilities located along Red Bank Road. The existing narrow causeway (currently two 10-foot-wide vehicle travel lanes) would be widened to support two 12-foot-wide vehicle travel lanes and a six-foot-wide multi-purpose (pedestrian/cycling) path. The roadway would also be raised approximately 2.0 ft (to match connecting road elevations of 6 ft North American Vertical Datum of 1988 (NAVD88) to minimize the risk of regular occurring tidal flooding. In addition, communication and power lines would be buried within the causeway.

The six-foot-wide multi-use path is the recommend sidewalk width per UFC 3-201-01 and is sized to support pedestrians, cyclist, and golf carts. The multi-use path would extend from the Old Tom Road Causeway along Old Tom Road to the NPTU expansion facility, connecting the two sites for pedestrian traffic (**Figure 2-1**). This path would be located on the side of Old Tom Road which minimizes environmental impact and disruption to adjacent facilities, which is expected to be on the side of Old Tom Road opposite from the Cooper River. The number of times the pathway crosses Old Tom Road must be minimized for pedestrian safety. This modification could impact up to 0.4 acres of tidal wetlands at the causeway.

The three development alternatives are presented for the Old Tom Road Causeway Improvements are described in detail in **Section 2.1.3.1**, **2.1.3.2**, and **2.1.3.3**.

2.1.3.1 Alternative 1 (Preferred)

The causeway north of the existing NPTU parking areas would be raised and widened to provide safe passage of vehicular, bicycle, and pedestrian traffic as described in **Section 2.1.3** and depicted in **Figure 2-1**. The proposed action would also construct the 6 ft wide multi-use path for the pedestrian / cycling traffic using fill material for construction. Old Tom Road would still be widened at the causeway to support two 12-foot-wide vehicle travel lanes and the road elevation would be raised approximately 2 ft to minimize the risk of tidal flooding. The widening and raising would require fill and a standard pavement pouring, resulting in an insignificant, but overall net loss of wetlands and stream habitat.

The water management function of the weir and culvert system would be maintained. A multi-use pathway would be constructed extending approximately one mile north from the existing NPTU facility to the proposed new NPTU facility. The proposed pathway would cross the Cooper River tributary and therefore be incorporated into the causeway improvements as mentioned above.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.3.2 *Alternative 2*

The proposed action described in Alternative 1 would modify the pedestrian pathway to be constructed as a cantilevered bridge. This option would require less fill material, thereby reducing potential of impacts to wetlands. The overall width of the causeway would be reduced relative to Alternative 1.

2.1.3.3 *Alternative 3*

The proposed action in **Section 2.1.3** and under Alternative 1 and 2 would be modified to further reduce the wetland impact by installing the multi-use bridge and raising the road elevation approximately 2 ft to minimize the risk of tidal flooding. However, the Old Tom Road at the causeway would not be widened from two 10-foot-wide lines to two 12-foot-wide vehicle travel lanes. This alternative would reduce the width of the causeway therefore reducing the amount fill material required however this alternative does not address the concern of the narrow roadway at the causeway.

2.1.3.4 *No Action Alternative*

The No-Action Alternative would not raise or widen Old Tom Road north of the NPTU at JBC-WS. The existing causeway would continue to support all vehicle traffic flow to and from the NPTU from northern portions of the base. The road would continue to flood periodically throughout the year. Unsafe conditions would persist as pedestrians and cyclists would continue to use the roadway to access the NPTU. This alternative does not meet screening criteria.

2.1.4 **Laser Test Ranges**

The USAF and supported component missions plan to construct two FSO LTRs on JBC-WS property (**Figure 2-2**). Each range would require 10 ft by 10 ft concrete pads at range point of origin and end nodes. A raised structure would be added to the pads for laser mounting at the end nodes. Testing would be conducted from a small mobile trailer at the point of origin. The mobile trailer would require only minor electrical installation of a new water-proof power pedestal for regular, but temporary, use. Vegetation clearing would be required along the entire length of the range. Following clearing, vegetation would be maintained on an as-needed basis utilizing chemical and/or mechanical maintenance. Laser testing would take place multiple times a year for up to one-week intervals. The frequency of testing may vary at each site.

2.1.4.1 *Alternative 1*

The USAF and supported component missions have identified two locations for the construction of two communications LTRs (**Figure 2-2**). Under Alternative 1, both ranges, discussed below, would be constructed in the described locations.

1.25 km Cooper River Crossing

The 1.25-kilometer (km) LTR would extend from an existing concrete pad in Complex D to a parcel of land managed by the Naval Munitions Command. A 30-ft wide clearing of trees from the concrete pad to Cooper River shore would be required for a clear angle to the range end node.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Temporary boat traffic control would be required during scheduled testing activities. Testing would take place quarterly at one-week intervals. Long-term vegetation maintenance would be required to ensure an unobstructed line-of-sight and reduce incendiary hazards.

2.05 km SAUSR Test Range at 71°

The 2.05 km Small Autonomous Unmanned Systems Research (SAUSR) Range LTR would extend northeast at 71 degrees (°) magnetic from the NIWC SAUSR range. Testing would take place two to three times a year for one-week intervals. NIWC would provide traffic control at either end of the testing activity to ensure any SAUSR Range traffic was cleared prior to laser operation. Use of the laser would be coordinated with other SAUSR stakeholders to minimize disruptions and work could be scheduled during off-peak hours or weekends, if required.

The first 550 meters (m) of the proposed range is managed and cleared NIWC property. A 500 m extension would continue northeast into forested areas. A 1000 m extension would continue from the 500 m extension endpoint, for a total of 2050 m. At the beginning of the 550 m range and at each extension end node, a concrete pad would be constructed to support laser test equipment, totaling four concrete pads. A 30 ft wide vegetation corridor would be cleared to ground level from the range property extending through the forested areas. Long-term vegetation maintenance would be required to ensure an unobstructed line-of-sight and reduce incendiary hazards.

2.1.4.2 No Action Alternative

The No-Action Alternative would not construct LTRs at JBC-WS. This alternative would result in an inability of NIWC Atlantic to perform research. There would be no advancements in FSO capabilities and skills, and research could not be performed. USMC and USN capability requirements would not be met.

2.1.5 Goose Creek Floating Dock

The USAF and supported component missions plan to construct a floating dock adjacent to the Goose Creek boatshed located on the Cooper River (**Figure 2-3**). The floating dock would be approximately 90 ft long to support the permanent mooring of a 42-ft survey vessel and temporary mooring of a 32-ft survey vessel. The dock would mount to fender piles located on the northwest face of the existing covered boat shed. A 40 ft long aluminum gangway would be constructed, leading to the eight floating dock panels comprising the 60 ft long dock area.

2.1.5.1 Alternative 1

Under Alternative 1, the Goose Creek floating dock would be constructed along the northwest face of the boatshed structure along the Cooper River (**Figure 2-3**). The anticipated work includes driving piles for the support of the floating dock and access dock to connect to the existing boatshed structure, construction of an access pier that would connect to existing bay opening of boatshed, and installation of a gangway and floating dock. Electrical and water line connections would connect to existing Boatshed infrastructure or land side utilities.

2.1.5.2 No Action Alternative

The No-Action Alternative would not construct a floating dock along the Cooper River at JBC-WS. Vessels would be subject to retracted space availability and limited space.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.6 Pier Edwards Demolition

The proposed action would demolish the fishing pier and repair the police/security dock at the Pier Edwards area of JBC-WS (**Figure 2-3**). The fishing pier would be entirely demolished. This would include removal of the fixed timber pier, concrete abutment, pier head, light posts, and electrical conduits. The timber planks of the police/security dock would be replaced on an as-needed basis to address loose and heavily weathered plank connections.

Other fishing opportunities remain available at JBC; therefore, this action will not substantially decrease fishing access for recreational users.

2.1.6.1 *Alternative 1*

Under Alternative 1, the fishing pier would be demolished, and the police/security dock would be repaired as described in **Section 2.1.6** and shown in **Figure 2-3**. Unnecessary pier infrastructure would be removed, and the safety and longevity of the police/security dock would be increased.

2.1.6.2 *No-Action Alternative*

Under the No-Action Alternative, no repairs or demolition would take place in the Pier Edwards area. The piers would continue to degrade past the point of safe and viable use.

2.1.7 Pier Bravo Demolition

The proposed action would demolish and dispose of the entire pier structure including piles, pile caps, beams/stringers, decking, railings, utilities, building structures, including materials on the pier and within the pier structures Pier Bravo in the Cooper River at JBC-WS (**Figure 2-3**). Specifics of proposed the demolition activities are unavailable, therefore reasonably foreseeable impacts will be identified and analyzed. These requirements include, but are not limited to:

- Floating rafts placed under the pier to catch demolition debris,
- Floating boom system to provide perimeter containment of incidental floatable materials,
- Hazardous materials (such as lead-based paint and materials containing asbestos) removal as required,
- Utilization of a floating crane to move demolished materials to barges,
- Utilization of utility barges for removed piles to minimize potential releases of creosote, petroleum sheens, and turbidity in the river, and
- Implementation of erosion and sedimentation control measures.

2.1.7.1 *Alternative 1*

Under Alternative 1, Pier Bravo would be demolished as described in **Section 2.1.7** and shown in **Figure 2-3**. This would remove the unusable and deteriorating infrastructure from the Cooper River waterway and reduce associated hazards.

2.1.7.2 *No-Action Alternative*

Under the No-Action Alternative, Pier Bravo would be left in place. There would be no demolition activities.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.8 Quarter A Dock Repairs

The proposed action would repair various components of the Quarter A Dock at JBC-WS (**Figure 2-3**). Cross bracing would be removed and replaced with treated timber bracing. Failed connection hardware would be replaced throughout the dock. Guide pile assemblies would be replaced to secure dock anchorage.

2.1.8.1 *Alternative 1*

Under Alternative 1, all Quarter A Dock described in **Section 2.1.8** would be repaired. This would extend the life of the dock as a small craft berthing pier.

2.1.8.2 *No-Action Alternative*

Under the No-Action Alternative, no repairs would be made to the Quarter A Dock. The dock would continue to degrade to a point past the lateral loading capabilities required to moor small craft.

2.1.9 Natural Resources Facilities

The proposed NRP Storage Facility consists of a roofed, open-sided structure with enclosed storage area on one end. This structure would cover a 130 ft by 30 ft concrete pad with electrical outlets, compressed air lines, and overhead lighting. The area around the facility would need to be cleared of timber, site prepped and finished with gravel. A security fence connected to existing fence would enclose the entire facility. The proposed facility site is approximately 170 ft by 225 ft and is immediately adjacent to current fenced NRP Compound (**Figure 2-4**).

The storage area would contain mission-critical equipment/vehicles including, but not limited to one fire truck, two farm tractors, one forestry skidder, one skid-steer, four pick-up trucks, four utility-terrain vehicles, four all-terrain vehicles, four trailers, two portable fuel tanks, and multiple attachments (bush hogs, blowers, disks, blades, grapples, augers, forks, etc.). Most of this equipment is employed in the Wildland Fire Program preventing wildfire and protecting mission-critical infrastructure including the base's power grid, munitions storage areas, and the wildland/urban interface.

A new administration facility would also be constructed. The new facility would be approximately 2,400 sf, providing offices and storage space for Natural and Cultural Resources personnel. This would include a conference room, rest rooms, shower area with benches & lockers, kitchen/break room, common area for office machines and drafting table, and a storage closet.

A new Forestry/Wildland/Maintenance facility would be constructed with lights, climate control, and two large rollup drive through garage bay doors. The facility would be approximately 5000 sf. The existing septic tank would be replaced, and sewer systems would be tied into the existing main.

2.1.9.1 *Alternative 1*

Under the proposed action, the vehicle storage facility would be constructed near the current Natural Resources offices (**Figure 2-4**). The proposed facility would construct a 130 ft by 30 ft concrete pad with roofed shelter, and a security fence along the perimeter.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.9.2 No Action Alternative

The No-Action Alternative would not construct the storage facility near the Natural Resources offices at JBC-WS. Personnel would continue to leave vehicles/equipment parked in an open exposed environment, leading to increased equipment and vehicle wear. The Natural Resources Department would continue to use an outdated structure for storage.

2.1.10 Sewer Lift Stations

The proposed action would replace five dry well sewage lift stations and replace them with wet well SLSs (**Figure 2-5**). The existing SLSs 66, 310, 709, 730, and 1389 would be demolished and backfilled. New submersible pumps would be installed using corrosion resistant materials and standard industry designs. The new SLS facilities would include new a manhole/wet well, pumps, 6-inch (in) emergency bypass line, grinders capable of handling solids and non-woven materials, and control system with alarms. Three pumps of the same size would be installed at each SLS. Units would have capacity such that, with any unit out of service, the remaining units would have capacity to handle the design peak hourly flow. The existing backup generators would be reused depending on their condition. New generators would be provided in the event existing generators were not able to be reused.

Proposed location-specific design criteria are as follows:

- SLS 310 – New perimeter fence would be constructed.
- SLS 709 and 1389 – Existing fence around generator would be removed and replaced with a new perimeter fence.
- SLS 730 – Existing generator currently wired to the building to provide backup power would be constructed on existing 6 ft x 10 ft concrete pad located behind the building.

2.1.10.1 Alternative 1

Under Alternative 1, the would replace all five dry well sewage lift stations and replace them with wet well SLSs as described in **Section 2.1.10** and shown in **Figure 2-5**.

2.1.10.2 No-Action Alternative

The No-Action Alternative would not replace existing sewage lift stations. Existing infrastructure would operate until failure, potentially reducing the waste management capabilities of JBC-WS.

2.1.11 Water Distribution System

Water System replacements would occur in three primary areas of JBC-WS designated as North, Central, and East for the purpose of this assessment (**Figure 2-6**). The water line installation method of horizontal directional drilling, also known as directional boring, would be used to drill underneath potential wetlands. All areas of the site disturbed by demolition and new construction would be graded to provide positive drainage with no standing water. Site disturbance would be limited to the installation of the new water main and services. Silt fence would be provided along specified edges of the project site.

Construction de-watering would potentially be required to remove storm water or ground water from bore pits, trenches, and other excavations on the construction site. This removal involves the pumping of the water to an upland grassy location.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Description of the Proposed Action and Alternatives

Installation Development
Joint Base Charleston, South Carolina

North

The proposed action for the North JBC-WS Water Distribution System would replace the approximately 45,000 lf of asbestos concrete, cast iron, and PVC piping comprising the water distribution mains at the ASLAC and FLETC areas of the Weapons Station.

Central

The proposed action for the Central JBC-WS Water Distribution System would replace the approximately 28,500 lf of asbestos concrete, cast iron, and PVC piping comprising the water distribution mains north of Red Bank Road on Jefferson Avenue, Boone Avenue, and Fletcher Street; and the ordnance area, south of Red Bank Road.

East

The proposed action for the East JBC-WS Water Distribution System would replace valves, 32 fire hydrants, and the approximately 34,500 lf of asbestos concrete, cast iron, and PVC piping comprising the water distribution mains at the Eastside and Waterfront districts of JBC-WS. Additional improvements would include increasing the 6 in lines to 8 in lines from the water tower along Quality Circle, Red Bank Road, and across Old Tom Road to Building 1670, replacing a single 12 in main from Red Bank Road to Wilkinson Way and abandoning the 10 in loop, and replacing the 10 in line with an 8 in line from Wilkinson Way to Building 907. Old 10 in and 12 in mains along Red Bank Road would be replaced with a single 12 in main.

Thirty-two fire hydrants would be installed at all locations of existing hydrants and every 1,000 lf. Existing fire service lines and domestic water mains would be cut, capped, and tied to the new water lines once all new lines have been tested and approved.

2.1.11.1 Alternative 1

Under Alternative 1, all proposed water distribution system infrastructure would be constructed as detailed in **Section 2.1.11** and shown in **Figure 2-6**. Replacement of the existing infrastructure would improve the reliability of service and maintain the operational capacity of missions at JBC-WS.

2.1.11.2 No-Action Alternative

Under the No-Action Alternative, none of the proposed infrastructure would be constructed at JBC-WS. There would be an increased likelihood of failure of pipeline elements and resulting costly repairs.

2.1.12 Civil Engineering Complex: Shop

The operations function at JBC-AB is supported by twenty shops and storage buildings with a mean age of thirty-five years. This proposed action would include: construction of six new facilities totaling 4,135 square m (sm) with reinforced concrete foundations and floor slabs in conformance with local seismic requirements; brick veneer/split-faced block exterior finishes and standing seam sloped metal roofs in accordance with base Architectural Compatibility Plan; communications support for voice and data systems, fire detection/alarm systems, pavements with curbs/gutters, fire suppression sprinkler systems, sidewalks, security fencing, site restoration, and landscaping.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Description of the Proposed Action and Alternatives

Installation Development
Joint Base Charleston, South Carolina

Twelve existing facilities would be demolished along with associated pavements. The twelve facilities include building 635 (Storage Shed), 660 (Maintenance Shop), 670 (Storage Shed), 714 (Maintenance Shop), 716 (Storage), Bldg. 717 (Maintenance Shop), three storage sheds (with undetermined building numbers), and storage sheds 2-6, 2-7, and PB5 (**Figure 2-7**).

Shop equipment would be relocated, and environmental remediation would be conducted as necessary and required. Facilities would be designed as permanent construction in accordance with the DoD UFC 1-200-01, General Building requirements.

The proposed action would also involve the construction of six new facilities totaling 4,135 sm.

2.1.12.1 Alternative 1

The proposed action would develop all proposed elements detailed in **Section 2.1.13** and shown in **Figure 2-7**. The proposed action would create a modern, conveniently located, and properly configured multi-facility complex required to efficiently meet mission needs.

2.1.12.2 No-Action Alternative

The No-Action Alternative would not develop the Civil Engineering Shop Complex. The inadequate and inefficient shops and storage buildings would continue to hinder productivity. Energy inefficient, substandard, and obsolete facilities would continue to be maintained, requiring a disproportionate investment of dwindling operations and maintenance account resources.

2.1.13 Civil Engineering Complex: Entomology Facility

The existing Entomology Facility (Bldg. 717), originally constructed in 1982, is inadequate for extended use and beyond its useful life. The facility is of wood construction and was built as a temporary facility and is still in continuous use. The exterior siding dates from the original construction and contains severely deteriorating asbestos shingles, which pose potential health and safety risks and can no longer be repaired with similar materials. The flat roof demands continuous repair, the fire alarm systems are outdated, and the HVAC and dust collection systems are ineffective, energy inefficient, and obsolete.

The proposed action would construct a 2,870 sf Entomology Facility with: reinforced concrete foundation and floor slabs, brick veneer/split-faced block exterior finishes and standing seam sloped metal roof, communications support for voice and data systems, fire detection/alarm systems, pavements with curbs/gutters, fire suppression sprinkler systems, sidewalks, security fencing, site restoration, and landscaping. The facility would designed and constructed in accordance with Armed Forces Pest Management Board Technical Guide 17, Military Handbook - Design of Pest Management Facilities. Construction of the new facility would include the demolition of the existing 2,870 sf facility (**Figure 2-7**).

2.1.13.1 Alternative 1

Alternative 1 would demolish the existing Entomology Facility and construct a new facility within the proposed Civil Engineering Complex. The new facility would include all elements described in **Section 2.1.14**.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.13.2 No-Action Alternative

The inadequate and inefficient facility is hindering the productivity of Entomology personnel. Continued use of substandard, failing facilities would adversely affect 628 CES operations and result in failure to meet mission requirements.

2.1.14 Military Working Dog Complex

The proposed action would construct a new kennel and obedience course at the existing MWD complex that would accommodate space for additional MWDs.

The new kennel would require demolition of the fence surrounding the existing obedience course, and removal of existing obedience course training equipment (**Figure 2-8**). The new kennel would be surrounded by a concrete walkway integrating the new kennel with the existing Bldg. 649 to the south. A concrete pad would be constructed south of the new kennel to site a new HVAC system. A 10 ft x 20 ft break area would be constructed north of the new facility. New asphalt pavement would be replaced in the existing parking lot. New water, firewater, electrical, and sewer service utilities would be provided to the new kennel building.

The new obedience course would be approximately 22,950 sf and constructed south of the Bldg. 648 animal clinic (**Figure 2-8**). A concrete walkway would be constructed leading to a bleacher area, where the existing obedience course bleachers would be sited. The course would be surrounded by an 8 ft high chain link fence.

2.1.14.1 Alternative 1

Alternative 1 would construct a new kennel and obedience course in the existing MWD complex. This would also include new parking asphalt, concrete sidewalks, and construction of new wire fence and gates. Construction would include all elements described in **Section 2.1.14**.

2.1.14.2 No-Action Alternative

Under the No-Action Alternative, the new kennel and obedience course would not be constructed. There would be no additions to the complex, and there would be no change in the operational readiness of the MWDs and trainers.

2.1.15 Car Wash Demolition

The proposed action would demolish the Bldg. 630 car wash (**Figure 2-7**), as it is no longer in use and costly to repair. Typical demolition activities would be conducted as described in **Section 2.0**.

2.1.15.1 Alternative 1

Under Alternative 1, the Bldg. 630 car wash would be demolished as described in **Section 2.1.15**. Typical demolition activities would include be conducted as described in **Section 2.0**.

2.1.15.2 No-Action Alternative

The No-Action Alternative would not demolish the Bldg. 630 car wash. The existing car wash would continue to degrade further.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.16 Forward Area Refueling Point

FARP Bldg. 685 (**Figure 2-7**) was originally constructed in 1991 and is used solely for FARP operations. The proposed action would construct a 255.5 sm single story sprinkler equipped facility consisting of concrete foundation, concrete floor slab, masonry-type exterior and sloped standing seam metal roof, including utilities. The proposed facility would be capable of sustaining FARP operations at JBC, providing adequate space for administrative, locker, restroom, maintenance, and operational tasks. The proposed facility would provide space for the two Forward Area Manifold carts currently stored outdoors. The proposed action would demolish the existing operations facility (55.7 sm).

2.1.16.1 Alternative 1

Alternative 1 would construct all elements of the new FARP building described in **Section 2.1.16**. This alternative would improve the quality and efficiency of FARP operations and equipment.

2.1.16.2 No-Action Alternative

Under the No-Action Alternative, FARP operations would continue to be housed in an inadequate facility which would affect the efficient support of the mission and degrade readiness due to the lack of refueling capability for JBC aircraft. The mission would be negatively impacted by the lack of capability to work on and store FARP equipment safely.

2.1.17 Ambulatory Care Center

The scope of the proposed action is to consolidate the clinical operations by relocating the Mental Health department into the Medical/Dental Clinic (Bldg. 364), and to consolidate logistics operations by relocating the Logistics and Facility Management department into the Medical Warehouse (Bldg. 1001). This project would include realigning, right-sizing, and modernizing Dental (including Dental Instrument Processing Center [DIPC]), thereby creating space for the Information Management/Information Technology (IM/IT) department and the Resource Management department. In addition, the project would demolish the current Mental Health/Education and Training/Resource Management facility (Bldg. 1000) and replace it with a new modern purpose-built Education and Training facility (New Bldg. 1000). The proposed action would optimize the efficiency of clinical and logistics operations and reduce the facility footprint and associated operations costs. Facilities to be developed under this proposed action are depicted in **Figure 2-9**.

The existing DIPC is a two-room outdated layout which is not suited for modern dental instrument processing and sterilization operations. The right-sizing of Dental would enable the relocation of IM/IT and Resource Management into excess Dental space, upgrade Dental Radiography, and upgrade DIPC to a modern three-room layout.

IM/IT is currently located on the first floor of the Medical/Dental Clinic within prime clinical area. Relocating IM/IT to the second floor of Bldg. 364 within excess Dental space would allow the relocation of Mental Health into the Medical/Dental Clinic.

Mental Health is the only clinical department geographically separated from the Medical/Dental Clinic which impacts operations and is an inconvenience for patients and staff. Relocating Mental

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Health would optimize operational efficiency of clinical operations and lead to patient satisfaction and optimized outcomes.

The Education and Training department experiences disruptions during trainings as visitors/staff traverse through class spaces to other areas in the department. The proposed action would demolish Bldg. 1000 and construct a replacement facility (New Bldg. 1000) for Education and Training to optimize training and preparedness for home station and deployment operations.

2.1.17.1 Alternative 1

The Proposed Bldg. 364 alterations would relocate and reconfigure areas for a Biomedical Equipment Room, Logistics Equipment Storage, Staff Lounge, Janitor's Closet, and a Communications Room, as described in **Section 2.1.17**. The building would include renovations to the Dental, IM/IT, Resource Management, Mental Health, and biomedical engineering/equipment technician/technologist (BMET) areas, totaling approximately 11,200 sf.

The New Bldg. 1000 would add approximately 2,300 sf of office, classroom, lobby, communication, and facilities space for the Education and Training Department. Building 364, 1001, and the new Bldg. 1000 would utilize existing water sewer, and power systems. The Building 1001, the new addition, would add approximately 2,200 sf of facilities space for Facility Management, Logistics, Next Generation Diagnostic Systems (NGDS) Laboratories, and a storage and communications room.

2.1.17.2 No-Action Alternative

The No-Action Alternative would not develop the new ambulatory care center. The existing medical facilities would stay in place. Infrastructure would continue to degrade and near end of life.

2.1.18 Water Tower #2 Demolition

The proposed action would demolish Water Tower #2 (**Figure 2-9**). The tower no longer supports water supply and distribution to JBC, and the physical condition of the tank cannot support further use for this purpose. Typical demolition activities would be conducted as described in **Section 2.0**.

2.1.18.1 Alternative 1

Under Alternative 1, Water Tower #2 would be demolished as described in **Section 2.1.18**.

2.1.18.2 No-Action Alternative

The No-Action Alternative would not demolish Water Tower #2. To maintain structural integrity and safety for the surrounding structures, the tower would undergo costly improvements that would not contribute to any existing mission.

2.1.19 Fire and Rescue Station

The new fire and rescue station would provide emergency response capabilities for the two active JBC-AB runways supporting both USAF flights and the civilian airport flights. The station would also serve the installation mission facilities as well as base housing. The facility would include

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

vehicle apparatus bays, maintenance and support functions, equipment storage, emergency dispatch, administrative and training/classroom areas, mechanical, electrical, communication spaces, and residential support spaces. The new facility would be sited on the site of the existing fire station (Bldg. 168), therefore temporary facilities would be required to ensure uninterrupted service to the public (**Figure 2-10**). These facilities would support administrative functions, house response personnel, and provide protection for response vehicles and equipment.

Construction under the proposed action would include concrete spread footings and reinforced concrete slab-on-grade foundations, structural steel framing, exterior brick veneer, and standing seam metal roof. All systems necessary to provide a complete and usable facility would be included, such as utilities distribution systems, uninterruptable power system, fire detection and alarm systems, HVAC, and a water and fire suppression system. A 350 kilowatt (kW) generator would also be installed.

The proposed action would demolish Bldg. 168 (1904 sm) and Building 161 (5 sm). Temporary interim swing space facilities are also included in the project to support fire station functional requirements during demolition of existing fire station and construction of the new fire station. Interim facilities are temporary and would be demolished upon completion of the project.

2.1.19.1 Alternative 1

Under Alternative 1, the new Fire and Rescue Station would be constructed at the existing fire station site. The existing fire station (Bldg. 168) would be demolished, and with a new one- and two-story facility constructed in its place, including all elements described in **Section 2.1.19**. The

Proposed Action would meet current USAF and DoD standards, OSHA requirements, be consistent with existing land use, and resolve the issues of limited living space for personnel and storage space for equipment.

2.1.19.2 No Action Alternative

Under the No-Action Alternative, the existing fire station would remain in its existing state of inadequacy regarding space, storage, health and safety issues and structural deficiencies. Personnel would continue to live and work in substandard facilities. The existing fire station would require continued expenditure of repair/maintenance funds to maintain an inadequate and undersized building which is not in conformance with current USAF or environmental regulatory agency standards and does not provide an acceptable quality of life or workplace.

2.1.20 Runway Resurfacing

The USAF and supported component missions plan to repair the intersection of the two aircraft runways at JBC-AB (**Figure 2-10**). JBC is a joint use airfield that is served by two runways, 03-21 and 15-33, that intersect along their length. The joint user of the airfield is Charleston County Aviation Authority which operates Charleston International Airport, the commercial air carrier airport for Charleston, SC. On average, in the last 10 years, the intersection experienced 110,000 operations per year, including air carriers, air taxi, aircraft manufacturing, general aviation and military operations. Concrete repairs on Runways 03-21 and 15-33 would require closing of the entire airfield to all inbound/outbound air traffic. Construction would be performed at night when the air traffic tempo is slowest.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Construction on the runway intersection would occur during nightly 8-hour windows, approximately 2100 hours to 0500 hours, to avoid daytime aircraft traffic. Concrete panels would be installed at a rate of two per night for both alternatives. The existing pavement to be removed has a thickness of 2 ft.

2.1.20.1 Alternative 1: Fast Setting Concrete

A Fast Setting Concrete (FSC) strategy would be the primary consideration for replacement of the intersection pavement. Volumetric mixer trucks would be required for pouring. Truck units range in volume capabilities from 10 to 14 cubic yards. The 25 ft by 25 ft (2 ft thick) panels would require 47 cubic yards of material. Accordingly, each panel slab would require 5 trucks at one load per truck. Placement of FSC would last 4 hours, allowing 4 hours for curing and joint sawing. Construction activities would take place between 83 and 137 days depending on the selected construction methods.

2.1.20.2 Alternative 2: Precast Concrete Panel

Forklift-like equipment or cranes required to move Precast Concrete Panel (PCCP) weighing in at approximately 25 tons. Lighter panels under 24 tons would allow for transportation using more conventional equipment, however exact panel specifications are not immediately available. Placement of PCCP panels would last the entire 8 hours. Construction activities would take place between 84 and 137 days depending on the selected construction methods.

2.1.20.3 No-Action Alternative

No resurfacing repairs would take place. There would be a potential increase in foreign object debris caused by degrading concrete material. Deteriorating pavement would create an unsafe landing environment and ultimately close both runways. This option would have immeasurable negative impacts to the region.

2.1.21 Parking Ramp Repairs

The USAF and supported component missions plan to repair the airfield parking ramp at JBC-AB (**Figure 2-10**). The airfield parking ramp is required to provide support to the 437th Airlift Wing and the 315th Airlift Reserve Wing. Both wings primarily use the C-17 Globemaster. However, JBC also receives numerous transient aircraft of various types.

The ramp is currently structurally inadequate for current mission requirements based on 2014 Airfield Pavement Evaluation. In addition, a 2016 Pavement Condition Index report noted that there are signs of asphalt deterioration on the parking apron and repairs would be required in the near future. Many parking spots will need to be closed if ramp is not repaired. This would severely limit the ability of JBC to support the 437th Airlift Wing and 315th Airlift Reserve Wing's missions.

2.1.21.1 Alternative 1

This project consists of the mill and overlay of asphalt islands surrounding parking spots 16 through 34 and 60 Row. All spalls and cracks in the concrete taxi lanes and parking spots within project limits would be repaired as part of this project. All Portland cement concrete (PCC)-PCC joints and PCC-Asphalt Concrete joints would be resealed as part of this project. New pavement markings would be provided.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Longitudinal cracks routinely develop along the nose gear wheel path in concrete parking spots. Ramp shoulders are showing signs of stress (mainly weathering and cracking of asphalt) and therefore would be milled and overlaid with asphalt. Concrete taxiways and parking are in good shape, but all spalls, cracks and joint sealant would be repaired to ensure longevity.

2016 Pavement Condition Index report notes signs of asphalt deterioration on the parking apron which require repairs as well as longitudinal cracks routinely developing along the nose gear wheel path in concrete parking spots. Repaving is necessary to sustain aircraft parking. No work has been performed since a 2016 pavement condition report identified nearly 1,000,000 sf of “poor” condition pavement, and the pavement has continued to deteriorate.

2.1.21.2 No-Action Alternative

The No-Action Alternative would not repair any of the parking ramp areas. Fewer spaces would be available for JBC and transient aircraft. There would be a potential increase in foreign object debris caused by degrading concrete material.

2.1.22 Hydrant Pits

The proposed action would construct five hydrant fueling pits in aircraft parking spaces 60 through 64 (**Figure 2-10**). Aircraft parked in these spots are currently refueled by truck. The hydrant pits would tie into the existing fuel supply main underlying the parking spots..

2.1.22.1 Alternative 1

Under Alternative 1, all five hydrant fueling pits would be constructed as described in **Section 2.1.22**. Efficiency would be gained as fueling trucks would no longer be required.

2.1.22.2 No-Action Alternative

Under the No-Action Alternative, no hydrant pits would be constructed. Aircraft refueling would continue via fuel trucks.

2.1.23 Cargo Laydown Area

The 437th Aerial Port Squadron requires as much space as possible for an additional cargo laydown area on the southwest side of the airfield directly south of Bldg. 184. Currently the 437th Aerial Port Squadron is utilizing aircraft parking spots 33 and 35 for storage of materials, leading to operational inefficiencies. The proposed action would prepare the existing forested and grass site for construction of a cargo laydown area while implementing Low Impact Design and Leadership in Energy and Environmental Design (LEED) compliant construction practices (**Figure 2-11**).

2.1.23.1 Alternative 1

The proposed action would provide approximately 60,000 sf of new asphalt pavement for the storage of palletized supplies/equipment on the southwest side of the JBC-AB airfield. Construction activities would involve installation of heavy duty asphalt pavement, site lighting, striping, curbs & gutters, and erosion control measures. Approximately 70 percent (%) of the site is forested and would require removal of trees and grubbing of stumps/roots. Because the site is

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

located on an active airfield, the exact location would need to remain clear of taxiway wingtip clearance (137 ft from centerline), runway lateral clearance (1,000 ft from centerline), and transition surface (7:1).

2.1.23.2 No-Action Alternative

The No-Action Alternative would not develop the cargo laydown area. Cargo would continue to be stored in aircraft parking spots. The 437th Aerial Port Squadron would continue to experience inefficiencies due to lack of space.

2.1.24 Munitions Facilities

The proposed action would demolish the existing aluminum Buildings 2194 and 2196 to be replaced with new ECM munitions facilities (**Figure 2-11**). The ECMs would be approximately 60 ft deep by 40 ft wide and include a concrete loading dock. The new facilities would also be constructed to provide electricity, communication, a lighting protection system, and a security system. The facilities would tie into existing power infrastructure. Interior elements include a pallet roller system, rolling blast door, new HVAC system, fire protection system, and new plumbing.

2.1.24.1 Alternative 1

Under Alternative 1, the existing Buildings 2194 and 2196 would be demolished and replaced with the new facilities described in **Section 2.1.24**. All associated infrastructure would be built. Several other alternatives were considered but eliminated from further consideration, as discussed in **Section 2.4.6**.

2.1.24.2 No-Action Alternative

Under the No-Action Alternative, there would be no construction to replace the degrading facilities. The building materials would continue to degrade leading to unsafe conditions and potential security hazards.

2.1.25 HAZMAT Load and Unload Facility

The proposed action would construct an approximately 1,000 sf single story facility consisting of concrete foundation, concrete floor slab, metal building with sloped standing seam metal roof, including all utilities. Office, bathroom/shower, communications room, and lounge areas would also be constructed.

Repairs would be made to the existing canopy, loading dock spalls, joint seal, bumpers, and edging. An electricity, water, sewer, communication, lighting protection system, fire and security system would be constructed as needed.

Site demolition would include demolition of existing Bldg. 2190 (**Figure 2-11**), pavement cuts for utility installation, grading the site in preparation for the new building, and demolition of the adjacent blast wall.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1.25.1 Alternative 1

Under Alternative 1, the existing Bldg. 2190 (**Figure 2-11**) would be demolished and replaced with a new facility containing all elements described in **Section 2.1.25**. All associated infrastructure would be built. Several other alternatives were considered but eliminated from further consideration, as discussed in **Section 2.4.6**.

2.1.25.2 No-Action Alternative

Under the No-Action Alternative, there would be no construction to replace the degrading facility. The building materials would continue to degrade leading to unsafe conditions and potential security hazards.

2.1.26 Dormitory Demolition

The proposed action would demolish the Bldg. 246 dormitory (**Figure 2-11**). The existing facility was constructed in 1954 and is past its useful life. Typical demolition activities would be conducted as described in **Section 2.0**.

2.1.26.1 Alternative 1

Under Alternative 1, the Bldg. 246 dormitory would be demolished as described in **Section 2.1.27**.

2.1.26.2 No-Action Alternative

The No-Action Alternative would not demolish the Bldg. 246 dormitory. The dormitory would continue to degrade in place.

2.1.27 NAAF Fire Station Addition

The USAF and supported component missions plan to add an extension to the existing Bldg. 20 fire station at the NAAF (**Figure 2-12**). The proposed fire station would encompass the existing patio area along the southwest face of the station. Equipment, gear, and firefighting agents currently stored in the vehicle stall area would be moved to the new addition. A concrete driveway would be constructed to the structure leading to roll up doors.

The proposed additions and would require the removal of an existing retaining wall, & additions to the concrete pad. Lighting and power outlets would be required within the new structure as well as a driveway leading to and from the new structure. The two driveways would lead to two roll up doors, which would be constructed on either side of the new structure, and measure approximately 10 ft wide by 50 ft in length. The current area of the concrete pad measures 21ft x 28 ft, the area of the requested extension would measure 36 ft 2 in long, 12 ft high, and 21 ft wide.

2.1.27.1 Alternative 1

Under Alternative 1, the NAAF Fire Station Addition would be constructed as described in **Section 2.1.27**.

2.1.27.2 No-Action Alternative

No addition would be made to the NAAF Fire Station. The firefighter personnel would continue to experience lack of storage and resulting operational inefficiencies.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.2 SELECTION STANDARDS

NEPA and CEQ regulations mandate the consideration of reasonable action alternatives to accomplish the Proposed Action. “Reasonable alternatives” are those that could also be utilized to meet the purpose of and need for the proposed action. Per the requirements of 32 CFR Part 989, the USAF EIAP regulations, and 32 CFR part 775, the USN policy for implementing CEQ and NEPA, selection standards are used to help determine feasibility of each action alternative, including potential facilities requirements and the extent to which each action alternative would fulfill the purpose and need for the Proposed Action. This section outlines the selection standards that were used by the USAF, USN, and supported component missions to develop and analyze these alternatives.

Each development would adhere to the selection standards described below:

- Fulfill current mission requirements.
- Maximize reuse of existing resources, to include personnel and facilities, to the maximum extent feasible for efficient and cost-effective operations.
- Follow design guidelines outlined in the JBC Architectural Compatibility Plan and Installation Facilities Standards.
- Meet current force protection measures outlined in USAF Instruction 32-1024 *Standard Facility Requirements*, UFC 4-010-01 *Department of Defense Minimum Antiterrorism Standards for Buildings*, the Americans with Disabilities Act of 1990, and Architectural Barriers Act of 1968.
- Meet current criteria outlined in UFC 3-260-01, *Airfield and Heliport Planning and Design*, the USAF Handbook 32-7084, *AICUZ Program Manager's Guide*, and other airfield UFC regulations.
- Result in no significant adverse impacts to nearby wetlands or floodplains.
- Result in no adverse impacts to protected species including, but not limited to, the northern long-eared bat (*Myotis septentrionalis*), red-cockaded woodpecker (*Picoides borealis*), wood stork (*Mycteria americana*), frosted flatwoods salamander (*Ambystoma cingulatum*), American chaffseed (*Schwalbea americana*), Canby's dropwort (*Oxypolis canbyi*), pondberry (*Lindera melissifolia*), West Indian manatee (*Trichechus manatus*), turtles (green [*Chelonia mydas*], Kemp's ridley [*Lepidochelys kempi*], leatherback [*Dermochelys coriacea*], and loggerhead [*Caretta caretta*]), and Atlantic sturgeon (*Acipenser oxyrinchus*).
- Result in no significant adverse impacts to marine mammals including, but not limited to the West Indian manatee.

2.3 SCREENING OF ALTERNATIVES

Alternatives for the proposed installation facilities were developed using the criteria described above to identify suitable development alternatives.

The selection standards described in **Section 2.2** were applied to these alternatives to determine which alternative(s) could meet facility development requirements and would fulfill the purpose and need for the action.

The alternatives that are included in this EA meet the selection standards described in **Section 2.2**. Alternatives that were initially considered but failed to meet the selection standards were screened from further analysis. The alternatives that were considered but not carried forward for detailed analysis are included in **Section 2.4**.

2.4 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

2.4.1 NPTU Simulation Expansion: Substation – Munitions Area

NPTU proposed to construct a new substation in the JBC-WS munitions area approximately 1/2 mile west of the proposed New Facility Alternative 1. The location would offer closer proximity to the New Facility than Substation Alternatives 1 and 2. This alternative was eliminated as the substation would be located within the explosive safety arc, and therefore did not meet screening criteria.

2.4.2 NPTU Simulation Expansion: Old Tom Road

This alternative would only raise the road elevation by approximately 2 ft to minimize the risk of tidal flooding. The widening of Old Tom Road at the causeway would be eliminated. The multi-use path from the causeway to the NPTU new facility would be eliminated as well. This alternative would reduce the width of the causeway therefore reducing the amount of fill material required, however this alternative does not meet screening criteria to provide a safe passage for pedestrians/cyclists and only addresses the tidal flooding concern.

2.4.3 Laser Test Ranges

The following location alternatives for the laser test ranges did not meet selection standards for the proposed action and were disqualified for further analysis.

2.4.3.1 850 m SAUSR Test Range at 57°

This alternative would utilize the same origin point as Alternative 1, extending northeast at 57°. A site survey noted that items behind the roadway may present a specular hazard if wet conditions existed, which would restrict laser activities during these conditions. Also, there appear to be manmade structures directly behind the proposed firing point.

2.4.3.2 1 km SAUSR Test Range at 72°

This alternative would utilize the same origin point as Alternative 1, extending northeast at 72°. Road conditions at this range may present a specular hazard if wet conditions exist, which would restrict laser activities during these conditions.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.4.3.3 Forest Access Road Test Range Location I

This alternative would construct test range on a forest access road in JBC-WS. The range would both limit access to the forest road and incur a higher maintenance load than the SAUSR range. Several specular hazards were observed in a nearby site survey including standing water near the firing point; reflective roadway signs; reflective roadway when wet; reflective railway tracks; and reflective power lines. Additionally, several forest access roads pass through the NPTU blast arc, so transit to the target site would require driving several miles out of the way to access the target site.

2.4.3.4 Forest Access Road Test Range Location II

This alternative would construct a laser firing site and target site on either side of Forest Creek to establish a test range. This alternative would require tapping into high voltage transmission lines and accessing geographically remote areas of the base, resulting in larger natural resource impacts compared to the other alternatives.

2.4.4 Natural Resources Storage Facility

The following alternatives for the NRP Storage Facility did not meet selection standards for the proposed action and were disqualified for further analysis.

2.4.4.1 Use of Existing Building

This alternative would utilize an existing building at the JBC-WS. There is no known building with adequate space, support facilities, or proximity to the Natural Resources Department that would support this alternative.

2.4.4.2 Renting Space Off-Base

This alternative would rent an off-base facility for the storage and maintenance of NRP equipment and vehicles. The logistics of moving equipment between an off-base facility and on-base work site would be detrimental to crew efficiency and effectiveness.

2.4.5 Civil Engineering Complex: Entomology Facility Additions/Repairs

This alternative would involve constructing additions and conducting renovations to the existing Entomology Facility. An analysis was prepared comparing the reasonable alternatives of new construction versus addition/repairs. Based on the potential benefits of the respective alternatives, new construction was determined to be the most safety-conscious and cost-effective option. Therefore, the alternative was removed from further consideration as a viable alternative.

2.4.6 Munitions Facilities and HAZMAT Load and Unload Facility

Due to their proximal location, the Munitions Facilities and HAZMAT Load and Unload Facility proposed actions shared potential siting and construction alternatives. The following location alternatives for the Proposed Actions did not meet selection standards for the proposed action and were disqualified for further analysis.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Description of the Proposed Action and Alternatives**

**Installation Development
Joint Base Charleston, South Carolina**

2.4.6.1 Butler Munitions Bunker

This alternative would involve demolition of the current facility and construction of a new Butler Facility made of pre-engineered metal building envelope. Electrical, communications, security, and mechanical systems would be provided to create a completely usable munitions facility. Further consideration for choosing this alternative would have to take in to account the lead-time is greater than one year from the notice to proceed due to manufacturing and supply chain issues.

2.4.6.2 Consolidated Earth-Covered Munitions Bunker/Load and Unload Facility

This alternative would involve consolidating the remaining two bunkers with the load/unload facility by constructing a larger butler/earth covered bunker. It would involve storing ammunition and explosives of different classes that cannot be stored together and would require changes in utilization of facilities that affect ammunition and explosives storage separation distances causing issues to the mission due to workarounds. This alternative is unreasonable and was not considered further.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Description of the Proposed Action and Alternatives

Installation Development
Joint Base Charleston, South Carolina

3.0 REFERENCES

- United States Navy (USN). Code of Federal Regulations (CFR) Part 775. 2022. Policies and Responsibilities for Implementation of the National Environmental Policy Act Within the Department of the Navy. February. Accessed March 28, 2022.
- United States Air Force (USAF). Code of Federal Regulations (CFR) Part 989. 1999. Environmental Impact Analysis Process (EIAP). July. Accessed March 28, 2022.
- Council on Environmental Quality (CEQ). 2021. National Environmental Policy Act Implementing Regulations, 40 CFR Parts 1500–1508. July.
- Department of Defense (DoD). 2020. Unified Facilities Criteria (UFC) 3-260-01 Airfield And Heliport Planning And Design, With Change 1. May.
- Department of Defense (DoD). 2020. Unified Facilities Criteria (UFC) 4-010-01 Department of Defense Minimum Antiterrorism Standards for Buildings. August.
- Department of the Air Force (DAF). 2017. Air Force Instruction 32-7084.
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- Secretary of the Air Force (SecAF). 2011. Air Force Instruction 32-1024, Standard Facility Requirements. July.
- United States Code (U.S.C.). 2011. Supplement 4, Title 10 - Armed Forces, Part 5061, Department of the Navy: Composition. January.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Description of the Proposed Action and Alternatives**

**Installation Development
Joint Base Charleston, South Carolina**

Appendix A: Figures

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

**Environmental Assessment
Description of the Proposed Action and Alternatives**

**Installation Development
Joint Base Charleston, South Carolina**

Appendix B: Agency Correspondence

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Environmental Assessment
Description of the Proposed Action and Alternatives

Installation Development
Joint Base Charleston, South Carolina

Scoping Letter Distribution List

Tribal Governments

- Absentee-Shawnee Tribe of Oklahoma
- Catawba Indian Nation
- Chickasaw Nation
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Muskogee (Creek) Nation
- United Keetoowah Band of Cherokee
- Alabama-Quassarte Tribal Town
- Kialegee Tribal Town
- Miccosukee Tribe of Indians
- Poarch Band of Creek Indians
- Seminole Nation of Oklahoma
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Seminole Tribe of Florida

Federal, State, and Local Agencies

- U.S. Fish and Wildlife Service
- US EPA, Region IV Regulatory Division
- South Carolina Department of Health and Environmental Control
- South Carolina State Clearinghouse for Intergovernmental Review
- SCDNR Director of Environmental Programs
- SCDHEC Office of Ocean and Coastal Resource Management
- South Carolina Dept of Archives and History, Deputy State Historic Preservation Officer
- North Charleston, SC Mayor
- Goose Creek, SC Mayor
- Hanahan, SC Mayor
- North, South Carolina Mayor
- North Charleston Department of Planning
- Berkeley County Planning and Zoning Department
- Charleston County Zoning and Planning Department
- Community Development Division County of Orangeburg, SC