

DRAFT

Environmental Assessment for 6 SFS Small Arms Firing Range at MacDill Air Force Base, Florida

Prepared for

6 CES/CEIE

MacDill AFB, Florida



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Acronyms and Abbreviations

Acronym	Definition
$\mu\text{g}/\text{m}^3$	microgram(s) per cubic meter
6 CES/CEIE	6th Civil Engineer Squadron/Environmental Element
6 SFS	6th Security Forces Squadron
927 SFS	927th Security Forces Squadron
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
AF	Air Force
AFB	Air Force Base
AFFF	aqueous film-forming foam
AFI	Air Force Instruction
AFMAN	Air Force Manual
AICUZ	Air Installations Compatible Use Zones
amsl	above mean sea level
AR	Army Regulation
bls	below land surface
BMP	best management practice
C	Candidate
CATM	Combat Arms Training and Maintenance
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	<i>Code of Federal Regulations</i>
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
dB	decibel(s)
dBA	A-weighted decibel(s)

Acronym	Definition
dBp	decibel(s) peak level
DEP	Department of Environmental Protection
DNL	Day-Night Average Sound Level
DoD	U.S. Department of Defense
DoDI	Department of Defense Instruction
E	Endangered
E2EM	Estuarine Intertidal Emergent
E2FO	Estuarine Intertidal Forested
E2SS	Estuarine Intertidal Scrub-Shrub
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EM	Engineer Manual
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPC	Environmental Protection Commission
ERP	Environmental Resource Permit
ESA	Endangered Species Act
FAC	<i>Florida Administrative Code</i>
FCMP	Florida Coastal Management Program
FL	Functional Loss
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FSRM	Facilities, Sustainment, Restoration, and Modernization
ft ²	square foot (feet)
FWC	Florida Fish and Wildlife Conservation Commission
GHG	greenhouse gas
GIS	Geographic Information System
GPS	Global Positioning System
IAP	initial accumulation point
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
ISWMP	Integrated Solid Waste Management Plan
LBP	lead-based paint
Lmax	maximum sound level

Acronym	Definition
MBTA	Migratory Bird Treaty Act
MC	munitions constituent
MILCON	Military Construction
mm	millimeter(s)
MMRP	Military Munitions Response Program
MPMB	Mangrove Point Mitigation Bank
mtpy	metric ton(s) per year
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCI	Non-Contained Impact
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NFA	No Further Action
NGVD 29	National Geodetic Vertical Datum of 1929
NHPA	National Historic Preservation Act
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	noise-sensitive area
NWI	National Wetlands Inventory
OPCB	Outdoor Partially Contained Baffled
ORAP	Operational Range Assessment Program
OSHA	Occupational Safety and Health Administration
PE	Proposed Endangered
PFAS	perfluoroalkyl and polyfluoroalkyl substances
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
POL	petroleum, oil, and lubricants
ppb	part(s) per billion
ppm	part(s) per million
PSD	Prevention of Significant Deterioration
R1UBx	Riverine Tidal Unconsolidated Bottom Excavated
RCRA	Resource Conservation and Recovery Act

Acronym	Definition
RI	remedial investigation
ROI	region of influence
SARNAM2	Small Arms Range Noise Assessment Model
SC GHG	social cost of greenhouse gas
SDZ	surface danger zone
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SWFWMD	Southwest Florida Water Management District
SWPPP	Stormwater Pollution Prevention Plan
T	Threatened
TBMB	Tampa Bay Mitigation Bank
tpy	ton(s) per year
UFC	Unified Facilities Criteria
UMAM	Uniform Mitigation Assessment Method
UMMC	Unspecified Minor Military Construction
USACE	U.S. Army Corps of Engineers
USC	<i>United States Code</i>
USFWS	U.S. Fish and Wildlife Service
VDZ	vertical danger zone
VOC	volatile organic compound
WOTUS	waters of the United States

1. Purpose of and Need for the Proposed Action

1.1 Introduction and Background

The 6th Air Refueling Wing proposes to reconstruct the small arms firing ranges at MacDill Air Force Base (AFB), Florida, to support ongoing training and certification of military personnel in the use of small arms under the Combat Arms Training and Maintenance (CATM) program. The CATM program at MacDill AFB is administered by the 6th Security Forces Squadron (6 SFS) and includes range and classroom training on small arms safety, operation, and maintenance, primarily for military personnel who are being deployed and for security personnel. Several other units at MacDill AFB also use the existing ranges for small arms training outside the CATM program. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled (OPCB) range, referred to as the South Range. Both of these ranges have design, operational, and safety deficiencies that impact the CATM program and other small arms training that is conducted on the ranges.

The Department of the Air Force (DAF) has prepared this Environmental Assessment (EA) to analyze the potential environmental impacts associated with reconstructing the CATM Complex at MacDill AFB. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) (42 *United States Code* [USC] 4331 et seq.), the regulations of the Council on Environmental Quality (CEQ) that implement NEPA procedures (40 *Code of Federal Regulations* [CFR] 1500–1508), and 32 CFR 989, “Environmental Impact Analysis Process (EIAP).”

1.2 Location

MacDill AFB encompasses 5,695 acres of land in the southern portion of the Interbay Peninsula in Hillsborough County, Florida. The Base is bordered by the city of Tampa to the north, Tampa Bay to the west and south, and Hillsborough Bay to the east (Figure 1-1). The CATM Complex, which consists of the North Range and South Range, is in the southeastern portion of MacDill AFB, on the western side of Marina Bay Drive. The specific locations of the ranges and alternatives analyzed are further discussed in Section 2.

1.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to improve the ability of the 6 SFS at MacDill AFB to effectively train military personnel in the use of small arms under the CATM program. CATM training is an essential part of preparing military personnel slated for deployment. The proposed range reconstruction is needed due to the design, operational, and safety deficiencies of the CATM Complex. The North and South Ranges have passed their 20-year service life and do not fully comply with the design standards specified in Unified Facilities Criteria (UFC) 4-179-02, *Small Arms Ranges* (DoD 2020), or the CATM training requirements specified in Air Force Instruction (AFI) 36-2654, *Combat Arms Program*. Both ranges regularly flood during the rainy season due to poor site drainage, especially the North Range. The presence of standing water on the ranges creates a bullet ricochet safety hazard, which prevents use of the ranges and requires training to be rescheduled or conducted at an off-base facility. Air ventilation at both ranges is controlled by large fans along the firing line and is influenced by prevailing winds. Due to its baffles, the South Range is susceptible to the accumulation of dust from frangible rounds and gun smoke, which pose a potential health hazard to users. Lastly, the entire firing line is not visible from the control booth on the South Range due to the walls and layout of the range, which limits the instructor's ability to conduct the training. Eliminating these deficiencies through the Proposed Action would enhance the readiness of deploying military personnel in support of the missions of the 6 SFS and MacDill AFB.

Figure 1-1. Project Location

1.4 Scope of Environmental Analysis

This EA provides a detailed analysis of the potential direct, indirect, and cumulative environmental impacts that would result from the Proposed Action of reconstructing the CATM Complex at MacDill AFB in support of the CATM program, and the No Action Alternative of not implementing the Proposed Action. Direct impacts are those that would result from the action at the same time and in the same place the action is being implemented. Indirect impacts are those that would result from the action at a later time or would be farther removed in distance from the action but are still reasonably foreseeable. Cumulative impacts are those that would result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions.

On May 1, 2024, CEQ published its Final Rule for "National Environmental Policy Act Implementing Regulations Revisions Phase 2" (89 *Federal Register* 35442). The effective date of the Final Rule is July 1, 2024; however, agencies may apply the revised regulations to ongoing activities and environmental documents begun before July 1, 2024. As described in Section 1501.3(d) of the Final Rule, "In considering

whether an adverse effect of the proposed action is significant, agencies shall examine both the context of the action and the intensity of the effect. Depending on the scope of the action, agencies should consider the potential global, national, regional, and local contexts as well as the duration, including short- and long-term effects.” The analysis of intensity of effects should consider the degree to which the action may adversely affect public health and safety, cultural and natural resources, environmental justice, tribal nations, and other factors identified in Section 1501.3(d) of the Final Rule. Determinations of significance for the adverse effects identified in this EA are based on these revised regulations.

The resources that have the potential to be appreciably affected are identified in Section 2.5 and are analyzed in detail for each alternative in Section 3. In addition to construction, the EA analysis also addresses operation of the reconstructed range, primarily with respect to noise levels. A total of four action alternatives are analyzed in this EA: Alternatives A, B, C, and D. These alternatives differ in location, design, and funding source.

1.5 Relevant Laws and Regulations

NEPA requires federal agencies to consider the potential environmental consequences of proposed actions as part of the agencies’ decision-making process. The law’s intent is to protect, restore, or enhance the environment through well-informed federal decisions. The CEQ was established in the Executive Office of the President to oversee NEPA implementation, primarily by issuing guidance and interpreting regulations pertaining to NEPA. 32 CFR 989, “Environmental Impact Analysis Process (EIAP),” outlines the procedures for the DAF to achieve and maintain compliance with NEPA and CEQ regulations. Other laws and regulations relevant to NEPA and the resources analyzed are discussed in this EA as applicable.

1.6 Intergovernmental Coordination, Public and Agency Participation

1.6.1 Intergovernmental Tribal Consultation

Consistent with National Historic Preservation Act (NHPA) of 1966 implementing regulations (36 CFR 800), Department of Defense Instruction (DoDI) 4710.02, *DoD Interactions with Federally Recognized Tribes*, Department of the Air Force Instruction (DAFI) 90-2002, *Interactions with Federally Recognized Tribes*, and Air Force Manual (AFMAN) 32-7003, *Environmental Conservation*, the DAF is consulting with federally recognized tribes that are historically affiliated with the geographic region being considered for the Proposed Action regarding the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the intergovernmental coordination processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations.

Four federally recognized Native American tribes have a historic affiliation with the area encompassed by MacDill AFB and its vicinity; these tribes are the Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Seminole Tribe of Florida, and Seminole Nation of Oklahoma. Intergovernmental consultation between MacDill AFB and the four affiliated tribes on the Proposed Action is being conducted in accordance with Section 106 of the NHPA and its implementing regulations in 36 CFR 800. Consultation letters for the Proposed Action were sent to the affiliated tribes on [TBD]. The draft EA was sent to the tribes for review and comment on [TBD]. Documentation of intergovernmental consultation on the Proposed Action is included in Appendix A. Comments received from the tribes are addressed in Section 3.4.

1.6.2 Public Participation

A public notice was published in the *Tampa Bay Times* on December 27, 2023 (Appendix B), to announce the 30-day early public review period for the Proposed Action, which is required by Section 2(b) of Executive Order (EO) 11990, “Protection of Wetlands,” and Section 2(a)(4) of EO 11988, “Floodplain

Management," to provide opportunity for early public review of proposed federal actions in wetlands or floodplains.

A Notice of Availability is being published in the *Tampa Bay Times* to announce the 30-day availability of the draft EA and Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) for public review and comment. Copies of the draft EA and FONSI/FONPA are being made available for public review at the John F. Germany Public Library (Main Library) and on the MacDill AFB public website. Comments from the public will be included in Appendix B and addressed in the final EA.

1.6.3 Interagency Consultation

In compliance with NEPA guidance, the environmental analysis process includes the coordination of the Proposed Action with other pertinent agencies and organizations. This interagency consultation occurs during early scoping prior to the development of the EA and during subsequent review of the draft EA. Per the requirements of the Intergovernmental Cooperation Act of 1968 (42 USC Section 4231[a]) and EO 12372, "Intergovernmental Review of Federal Programs," federal, state, and local agencies with jurisdiction are being consulted for their input on the Proposed Action, including the U.S. Fish and Wildlife Service (USFWS), State Historic Preservation Office (SHPO), and other state agencies through the Florida State Clearinghouse. Consultation letters for the Proposed Action were sent to USFWS and SHPO on February 16, 2024. The draft EA was sent to USFWS and SHPO for review and comment on [TBD]. Review of the draft EA by other state agencies was coordinated by the Florida Department of Environmental Protection (DEP) through the Florida State Clearinghouse. Documentation of interagency consultation on the Proposed Action is included in Appendix A.

1.6.3.1 Coastal Zone Management Consistency

The federal Coastal Zone Management Act (CZMA) provides assistance to states, in cooperation with federal and local agencies, to develop land and water use programs in coastal zones. According to Section 307 of the CZMA, federal projects that affect land uses, water uses, or coastal resources in a state's coastal zone must be consistent, to the maximum extent practicable, with the enforceable policies of that state's federally approved coastal zone management plan.

The Florida Coastal Management Program (FCMP) is based on a network of agencies implementing 24 statutes that protect and enhance Florida's natural, cultural, and economic coastal resources. DEP implements the FCMP through the Florida State Clearinghouse. The Clearinghouse routes applications for federal activities, such as EAs, to the appropriate state, regional, and local reviewers to determine federal agency consistency with the FCMP. Following their review of the EA, the FCMP state agencies provide comments and recommendations to the Clearinghouse based on their statutory authorities. Based on an evaluation of the comments and recommendations, DEP makes the state's CZMA consistency determination for the proposed federal activity. Comments and recommendations regarding federal agency consistency are then forwarded to the applicant in the state clearance letter issued by the Clearinghouse.

A copy of the draft EA and the DAF's federal CZMA consistency determination, provided as Appendix C, were sent to the Florida State Clearinghouse on [TBD], to obtain the state's concurrence and comments. Documentation of CZMA consistency consultation on the Proposed Action is included in Appendix A.

2. Proposed Action and Alternatives

2.1 Proposed Action

The CATM Complex at MacDill AFB consists of an OPCB range (Facility B881A), referred to as the South Range, and an NCI range (Facility B881), referred to as the North Range (Figure 2-1). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base. The CATM program at MacDill AFB is administered by the 6 SFS and includes range and classroom training on small arms safety, operation, and maintenance. CATM training is given to military personnel who are being deployed or changing stations and to military police and other security personnel. CATM training is conducted on both ranges but occurs primarily on the South Range. Several other units and organizations at the Base use the ranges for small arms training outside the CATM program.

The 6 SFS and the 927th Security Forces Squadron (927 SFS), which is the Reserve Command associate unit at MacDill AFB, together train personnel under the CATM program. CATM classes are conducted once per day at the ranges and include 10 students per class on average. Classes are given 4 days per week by the 6 SFS and 4 days per month by the 927 SFS. CATM training involves training and certification on the use of handguns that shoot 9-millimeter (mm) rounds and rifles that shoot 5.56-mm rounds. Approximately one hundred eighty 5.56-mm rounds are expended per rifle training day and approximately ninety 9-mm rounds are expended per handgun training day. Of the 4 days of CATM training conducted per week by the 6 SFS, 3 days are for rifle (5.56 mm) training and 1 day is for handgun (9 mm) training. The same split applies to the 4 days of CATM training conducted per month by the 927 SFS. Combined, CATM training conducted by the 6 SFS and 927 SFS expends approximately twenty-seven thousand 5.56-mm rounds per month for rifle training and approximately four thousand five hundred 9-mm rounds per month for handgun training. All weapons and ammunition used on the existing ranges are stored in the armory (Facility B1882) adjacent to the ranges (Figure 2-1). The CATM classroom training facility (Facility B1880) is located approximately 600 feet northeast of the ranges.

The North Range, including the surrounding berms, is approximately 2.1 acres and consists of a firing line with 25 lanes, an earthen impact berm, and earthen side berms. The North Range was constructed in 1982 and is a 100-meter NCI range, meaning that the distance from the firing line to the impact berm is 100 meters, or 328 feet. The width of the range interior between the bases of the side berms is approximately 164 feet. The range interior consists of mowed grass. The firing line infrastructure consists of a 2,900-square-foot (ft²) wood frame pavilion (overhang) on a concrete foundation with 25 firing points and a central concrete range control booth. The earthen impact berm of the North Range is approximately 18 feet high and 65 feet wide at the base. The northern and southern side berms of the range are both approximately 12 feet high and 25 feet wide at the base. Both frangible and nonfrangible ammunition are used on the North Range. Frangible bullets are composed of compressed lead-free metallic powders such as copper. Normal (nonfrangible) bullets typically contain a lead core, but some types may also be lead free. Frangible bullets are designed to disintegrate into small particles on target impact to minimize penetration and ricochet. Nonfrangible bullets do not disintegrate on impact.

The South Range, including the surrounding berms, is approximately 1.5 acres and consists of a firing line with 28 lanes, concrete side walls, wooden overhead baffles, and a bullet catchment system (trap). The South Range is a 25-meter OPCB range, meaning that the distance from the firing line to the bullet trap is 25 meters, or 82 feet. The South Range was originally constructed as an NCI range in 1982 and included the surrounding berms until 1998, when the side walls, baffles, and bullet trap were added. The width of the range is approximately 176 feet. The interior area between the firing line and bullet trap consists of mowed grass and is divided into five sections by concrete walls. The firing line infrastructure consists of a 19,000-ft² wood frame pavilion (overhang) on a concrete foundation that is connected to a concrete building that includes range control booths. Earthen berms, located outside the concrete walls, exist on the northern, western, and southern sides of the South Range. These berms were used as part of the

original NCI range built in 1982. The berm on the western side of the range, behind the bullet trap, varies from 12 to 16 feet in height and has a base width that varies from 30 to 50 feet. This berm was the impact berm of the original NCI range. The southern side berm of the North Range serves as the northern side berm of the South Range; this berm is approximately 12 feet high and 25 feet wide. The southern side berm of the South Range is smaller and is approximately 8 feet high and 25 feet wide. Only frangible ammunition is used on the South Range. Frangible bullets disintegrate into small particles when they hit or enter the bullet trap system of the range.

Figure 2-1. Existing Conditions at CATM Complex



Potential construction laydown areas for the reconstruction of the CATM Complex include the developed area adjacent to the ranges, including the parking lot, areas between the berms of both ranges, and the parking lot of the CATM classroom training facility northeast of the ranges. Staging will not occur in wetlands, and measures will be taken to prevent indirect impacts to wetlands and other surface waters from laydown areas. In addition to construction, the Proposed Action analyzed in this EA covers the operation of the reconstructed range, primarily with respect to noise levels. The Proposed Action is not expected to affect the type or amount of small arms training that is conducted at MacDill AFB, with

respect to the number of personnel trained or rounds fired annually or the types of small arms used during training.

2.2 Selection Standards

Under NEPA regulations, this EA is required to analyze the potential environmental impacts of the Proposed Action, No Action Alternative, and reasonable alternatives. Reasonable alternatives are those that meet the underlying purpose of, and need for, the Proposed Action; are feasible from a technical and economic standpoint; and meet suitable selection standards (screening criteria). Selection standards may include requirements or constraints associated with operational, technical, environmental, budgetary, and time factors. Alternatives that are determined to not be reasonable can be eliminated from detailed analysis in this EA. Additionally, EO 11988, "Floodplain Management," and EO 11990, "Protection of Wetlands," require consideration of practicable alternatives to avoid adverse effects on floodplains and wetlands, respectively. Practicable alternatives are those that are capable of being done within existing constraints and include consideration of pertinent factors including the environment, community welfare, cost, and available technology.

The selection standards used to screen alternatives for the reconstruction of the CATM Complex at MacDill AFB are identified in Table 2-1. As indicated, the selection standards included compliance with U.S. Department of Defense (DoD) range design standards and CATM training requirements, proximity to CATM classroom training, land use compatibility, and avoidance and minimization of wetland impacts.

Table 2-1. Selection Standards for Alternatives

Selection Standards	Description
1 – Range must comply with range design standards	The range must comply with the small arms range design standards specified in UFC 4-179-02, <i>Small Arms Ranges</i> .
2 – Range must meet CATM training requirements	The range must meet/provide the training requirements specified in AFI 36-2654, <i>Combat Arms Program</i> .
3 – Range must be on MacDill AFB	The range must be on MacDill AFB so users can avoid excessive travel, range rental fees, and scheduling conflicts at off-base facilities, and so they can be on-base to fulfill their military duties and respond to on-base incidents.
4 – Range must be in proximity to classroom training	The range must be in proximity to the classroom training facility (adjacent to the existing range) because range training is conducted in concert with classroom training under the CATM program. To maintain training efficiency, the range must be located within 5-minute walking distance from the classroom training facility.
5 – Range site must have compatible land use	The construction site for the range must not have existing land uses/operations that are incompatible with small arms training. The Surface Danger Zone of the range must not impact existing land uses or future development.
6 – Range design must minimize wetland impacts	The design of the range must avoid and minimize wetland impacts to the extent practicable.

2.3 Alternatives Considered but Eliminated from Further Analysis

Permanently training at a small arms range outside MacDill AFB was considered as a potential alternative to reconstructing the existing ranges at the Base. The nearest range to MacDill AFB is approximately 7 miles from the base. However, this range and most shooting ranges in the surrounding area provide only handgun training and skeet shooting, so they would not meet the CATM training requirements for rifle training (Selection Standard 2). This alternative would also not meet the screening criteria requiring the range to be on MacDill AFB (Selection Standard 3) and in proximity to the classroom training (Selection

Standard 4). Based on the number of classes provided and personnel trained under the CATM program at MacDill AFB, conducting the training offsite would involve travel for a large number of stationed personnel, potential scheduling conflicts at the off-base ranges, and inefficiencies that would result from separating the range training from the classroom training. For these reasons, this alternative would not meet the purpose of the Proposed Action, which is to improve the ability of the 6 SFS to conduct CATM training at MacDill AFB. Therefore, this alternative was determined to not be reasonable and was eliminated from detailed analysis in this EA.

2.4 Alternatives Carried Forward for Analysis

Based on the selection standards identified in Section 2.2, the 6th Civil Engineer Squadron and the 6 SFS identified four alternatives for reconstructing the CATM Complex at MacDill AFB, herein referred to as Alternatives A, B, C, and D. These four action alternatives, along with the No Action Alternative, are analyzed in detail in this EA. The DAF's preferred alternative is Alternative A. The alternatives are described in the subsections that follow.

2.4.1 No Action Alternative

The No Action Alternative is to maintain existing conditions. Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. The No Action Alternative does not meet the purpose of, or need for, the Proposed Action or the selection standards used to evaluate alternatives; however, it is analyzed in this EA as a benchmark against which the other alternatives can be compared, as required under CEQ regulations (40 CFR 1502.14). Under the No Action Alternative, the CATM program at MacDill AFB would continue to be impacted by the deficiencies of the existing ranges. CATM training at the Base eventually could be discontinued under the No Action Alternative due to continued range deterioration and operational safety concerns at the CATM Complex.

2.4.2 Alternative A

Under Alternative A, the North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range (Figure 2-2). Alternative A is the preferred alternative. The new NCI range under Alternative A is being designed in compliance with UFC 4-179-02, *Small Arms Ranges* (DoD 2020). Alternative A would be implemented using Facilities, Sustainment, Restoration, and Modernization (FSRM) funding.

Demolition of the North Range would include removal of the existing firing line infrastructure consisting of a 2,900-ft² wood frame pavilion (overhang) with a concrete foundation and central concrete control booth. All light poles and fixtures and electrical feeds would be removed. The existing berms of the range would be cleared and grubbed of all trees and shrubs and then sodded. A swale would be created near the footprint of the former firing line to facilitate range drainage. The interior of the range would be graded to drain into the swale and would be sodded. Lastly, an existing osprey nest located on a light pole within the interior of the North Range would be relocated in compliance with all applicable regulations and required permits.

Demolition of the South Range would include removal of the concrete walls, overhead baffles, bullet trap system, and baffle support columns not including those supporting the pavilion that covers the firing line. The existing light poles and fixtures, electrical feeds, and storm trench system on the range would also be removed. The firing line infrastructure consisting of the 19,000-ft² pavilion, concrete foundation, and connected concrete building with control booths would not be removed. The building would be refurbished as needed including structural repairs, painting, and utility upgrades. The existing berms of the range would be cleared and grubbed of all trees and shrubs, reshaped and/or built up to meet range requirements, and then sodded.

The interior of the new NCI range would extend 50 meters (164 feet) from the firing line to the last target. The existing western berm of the range would serve as the impact berm for the new NCI range. The base of the interior side of the impact berm would be recontoured as needed so that it is offset from the last target

by 8 feet. New firing points would be installed and marked along the firing line. The new range would have a total of 28 firing lanes like the existing range. Wooden posts with signs representing target positions would be installed on both sides of the range interior at various intervals from the firing line. A new perimeter fence and security gate would be installed for the new NCI range. The perimeter fence would extend around the existing parking lot and armory and tie into the base of the outer side berms of the North and South Ranges (Figure 2-2). The existing swale along the southern side of the range would be regraded, and the interior of the range would be graded to drain into the swale and sodded. Both frangible and nonfrangible ammunition would be used on the new NCI range.

Figure 2-2. Alternative A



2.4.3 Alternative B

Under Alternative B, the North and South Ranges would be demolished and a new 300-meter (984-foot) NCI range with 35 lanes would be constructed within the footprint of the North Range and adjacent field (Figure 2-3). The layout shown for Alternative B is conceptual and not based on any design. The new NCI range under Alternative B would be designed in compliance with UFC 4-179-02, *Small Arms Ranges* (DoD

2020). Alternative B would be implemented using Unspecified Minor Military Construction (UMMC) funding.

Demolition of the North Range and South Range under Alternative B would involve the removal of the same range infrastructure that would be removed under Alternative A as well as the firing line pavilion and building at the South Range, and the armory, access road, and parking lot at the site. The existing osprey nest located on a light pole in the interior of the North Range would be relocated in compliance with all applicable regulations and required permits.

Figure 2-3. Alternative B



A new covered firing line with 35 firing points would be constructed for the new NCI range. Other structures that would be constructed include a new control tower, elevated tower, one or two storage facilities, armory, access road, and parking lot. A pop-up target system with 50 targets would be installed and would be remotely controlled by the tower operator. The existing northern side berm and impact berm of the North Range would be used for the new NCI range. The northern side berm would be extended to the firing line, and the impact berm would be extended to the south as needed. A new southern side

berm would be constructed for the range from the impact berm to the firing line. The existing northern side berm and impact berm would be recontoured as needed to accommodate the required range length and width and berm width and height. The base of the interior side of the impact berm would be offset from the last target by 8 feet. In addition to being reshaped as needed to meet range requirements, the existing berms would be cleared and grubbed of all trees and shrubs and then sodded. A new perimeter fence and security gate would be installed for the new range. The layout for the perimeter fence has not been determined; the fence would tie into the base of the berms of the new range. Swales would be created as needed to facilitate range drainage. The interior of the range would be graded to drain into the swales and would be sodded. Both frangible and nonfrangible ammunition would be used on the new NCI range.

2.4.4 Alternative C

Under Alternative C, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 21 lanes and a new 100-meter (328-foot) NCI range with 14 lanes would be constructed within the footprint of the North Range and adjacent field (Figure 2-4). The layout shown for Alternative C is conceptual and not based on any design. The new NCI ranges under Alternative C would be designed in compliance with UFC 4-179-02, *Small Arms Ranges* (DoD 2020). Alternative C would be implemented using UMMC funding.

Figure 2-4. Alternative C



Demolition of the North and South Ranges under Alternative C would be conducted as described for Alternative B. New covered firing lines with 21 firing points and 14 firing points would be constructed for the 300-meter and 100-meter ranges, respectively. Other infrastructure would be constructed as described for Alternative B. The existing side berms and impact berm of the North Range would be used for the new 300-meter NCI range. The northern side berm would be extended to the firing line, and the southern side berm would be extended to the impact berm that would be constructed for the adjacent 100-meter NCI range. There would be no side berm between the 300-meter and 100-meter ranges; there may not be a partition between the ranges. The 100-meter range would have an impact berm and southern side berm.

The existing northern side berm and impact berm of the North Range would be cleared and grubbed of vegetation, recontoured as needed to meet range requirements, and then sodded as described for Alternative B. A new perimeter fence and security gate would be installed for the new ranges. The layout for the perimeter fence has not been determined; the fence would tie into the base of the berms of the new ranges. Swales would be created as needed to facilitate range drainage. The interior of the ranges

would be graded to drain into the swales and would be sodded. Both frangible and nonfrangible ammunition would be used on the new NCI ranges.

2.4.5 Alternative D

Under Alternative D, the North and South Ranges would be demolished and permanently closed, and a new 100-meter (328-foot) indoor small arms firing range with 35 lanes would be constructed on the southern side of the existing CATM classroom training facility (Figure 2-5). The layout shown for Alternative D is conceptual and not based on any design. The new indoor range under Alternative D would be designed in compliance with UFC 4-179-02, *Small Arms Ranges* (DoD 2020). The CATM Complex would be closed under the Military Munitions Response Program (MMRP). The new indoor range under Alternative D would be constructed using Military Construction (MILCON) funding. Demolition of the existing infrastructure in the CATM Complex and the closure of the CATM Complex under the MMRP would be conducted under separate funding.

Demolition of the North and South Ranges under Alternative D would involve removing all existing infrastructure on the ranges as described for Alternatives B and C. Closure of the CATM Complex under the MMRP would involve assessments of site contamination with lead and other metals, and as-needed remediation/reclamation. The existing berms of the CATM Complex would be removed as part of the MMRP cleanup and closure process.

Based on preliminary planning, the new indoor range under Alternative D would be 77,281 ft². All direct-fired rounds and ricochets would be contained within the indoor range. The new range would consist of a firing platform, 35 firing points, overhead baffles, bullet trap, and range control booth. Supporting facilities would include a weapons vault, weapons simulator, weapons cleaning/maintenance room, storage rooms, utility rooms, and restrooms. The range would include lightning protection, noise reduction features, and a ventilation system that would control the accumulation of gun smoke and frangible bullet dust. Only frangible ammunition would be used in the new indoor range.

Figure 2-5. Alternative D



2.5 Summary of Alternatives and Resources

2.5.1 Alternatives Analyzed

This EA analyzes the following four alternatives for reconstructing the CATM Complex at MacDill AFB and the No Action Alternative of not reconstructing the CATM Complex.

Alternative A: The North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range (Figure 2-2). Alternative A is the preferred alternative and is currently at the 35 percent design stage. Alternative A would be implemented using FSRM funding.

Alternative B: The North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 35 lanes would be constructed within the footprint of the North Range and adjacent field (Figure 2-3). Alternative B would be implemented using UMMC funding.

Alternative C: The North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 21 lanes and a new 100-meter (328-foot) NCI range with 14 lanes would be constructed within the footprint of the North Range and adjacent field (Figure 2-4). Alternative B would be implemented using UMMC funding.

Alternative D: The North and South Ranges would be demolished and permanently closed, and a new 100-meter (328-foot) indoor small arms firing range with 35 lanes would be constructed on the southern side of the existing CATM classroom training facility (Figure 2-5). The new range under Alternative D would be constructed using MILCON funding. Demolition of the existing infrastructure in the CATM Complex and the closure of the CATM Complex under the MMRP would be conducted under separate funding.

The new range under each action alternative would be designed in compliance with UFC 4-179-02, *Small Arms Ranges* (DoD 2020). Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner.

2.5.2 Resources Analyzed

This EA analyzes the potential impacts of each alternative in detail on the following resource areas:

- Air Quality
- Water Resources
- Geological Resources
- Cultural Resources
- Biological Resources
- Noise
- Land Use
- Public Health and Safety
- Hazardous Materials and Wastes

Section 3 presents the regulatory setting, affected environment, and environmental consequences of the alternatives for each resource analyzed.

2.5.3 Resources Eliminated from Detailed Analysis

Certain resources were determined to have no potential to be appreciably impacted by the Proposed Action and, therefore, were eliminated from detailed analysis in this EA. These resources include airspace use and management, infrastructure, socioeconomic, and environmental justice, and the reasons for their elimination from detailed analysis in this EA are discussed in the subsections that follow.

2.5.3.1 Airspace Use and Management

Airspace is the four-dimensional area (space and time) that overlies and falls under the jurisdiction of a nation. The Federal Aviation Administration is responsible for the safe and efficient use of U.S. navigable airspace. The use and management of airspace by the DAF is defined in AFI 13-201, *Airspace Management*, and AFI 11-214, *Air Operations Rules and Procedures*. MacDill AFB's Class D airspace extends from the surface to and including 1,199 feet above mean sea level (amsl) within a 4.5-mile radius of the Base (excluding the portion within Tampa International Airport's Class B airspace). Civil aircraft are authorized to transit through MacDill AFB's Class D airspace using standard Class D procedures. MacDill AFB has authorization to use Tampa International Airport's Class B airspace directly above MacDill AFB's Class D airspace up to and including 1,600 feet amsl.

Reconstruction of the CATM Complex at MacDill AFB under the Proposed Action would have no effect on the classification, dimensions, or other parameters of MacDill AFB's Class D airspace or any other existing airspace. The Proposed Action would also have no potential to result in airspace restrictions or congestion, or otherwise impact air traffic control or military or non-military use of any airspace. Lastly, construction and operation of a new range under any of the alternatives analyzed would have no effect on the potential

for bird/wildlife-aircraft strikes or on the Bird/Wildlife Aircraft Strike Hazard program of MacDill AFB. For these reasons, the Proposed Action would have no effect on airspace use and management.

2.5.3.2 Infrastructure

Infrastructure generally refers to utility infrastructure, including electrical power, natural gas, potable water, sanitary sewer, and stormwater utility systems, and to roadway infrastructure, including roads and parking areas. AFMAN 32-1061, *Providing Utilities to U.S. Air Force Installations*, addresses the management of utility services and commodities, the performance of utility systems, and the privatization of utility infrastructure on DAF installations. The Proposed Action would not involve employee hires or otherwise change the number of persons working at MacDill AFB and, therefore, would not affect the utility demand at the Base. Existing electrical, water, and sewer utilities at the site would be used for the new range under each alternative. The existing access road and parking lot would be demolished and rebuilt under Alternatives B, C, and D. Any new access road that is constructed would not require modifications to Marina Bay Drive. Construction-related traffic would be intermittent, localized (limited to defined haul routes), and temporary (limited to the construction period). For these reasons, the Proposed Action would have no appreciable effect on infrastructure.

2.5.3.3 Socioeconomics

Under each alternative, reconstruction of the CATM Complex at MacDill AFB would have no appreciable effect on the local economy or demographics. Direct expenditures for construction-related materials would benefit local suppliers, and secondary spending by construction workers would benefit businesses in the area such as gas stations and restaurants; however, these benefits would be temporary and have a negligible contribution to the overall local economy. Construction work would have no appreciable effect on the total labor force and employment in the region due to the low number of jobs that would be created; any increase in employment would be temporary. Operation of the new range under each alternative would not involve employee hires or otherwise change the number of persons working at MacDill AFB or living in the local area. The Proposed Action would be confined within the boundary of MacDill AFB and, therefore, would have no impact on commercial uses or other public economic activity. For these reasons, the Proposed Action would have no appreciable effect on the local demographics, local economy, number of persons living in on-base or off-base housing, number of children attending schools in the area, or demand for emergency services (medical, police, and firefighting).

2.5.3.4 Environmental Justice and Protection of Children

The White House defines environmental justice as “the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment” (EO 14096).

EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires federal agencies to identify and address environmental and human health impacts from federal actions on minority populations and low-income populations including human health, social, and economic effects. EO 14096, “Revitalizing Our Nation’s Commitment to Environmental Justice for All,” directs federal agencies to identify, analyze, and address disproportionate and adverse environmental and health impacts on communities with environmental justice concerns, including cumulative impacts. The DAF’s *Guide for Environmental Justice (EJ) Analysis under the Environmental Impact Analysis Process (EIAP)* provides guidance on how environmental justice should be analyzed in accordance with NEPA and DAF NEPA regulations in 32 CFR 989, “Environmental Impact Analysis Process (EIAP)” (AFCEC 2020).

Guidelines for the protection of children are specified in EO 13045, “Protection of Children from Environmental Health Risks and Safety Risks.” This EO requires that federal agencies prioritize identifying and assessing environmental health and safety risks that may disproportionately affect children, and ensuring that policies, programs, and standards address disproportionate risks to children that result from environmental health or safety risks.

Based on the analyses conducted in this EA, the Proposed Action would not result in any adverse environmental or human health and safety risks to human populations; therefore, none of the alternatives

under the Proposed Action would have disproportionate environmental or human health effects on minority or low-income populations. This finding is based on the results of the analyses conducted in this EA, which indicate that each alternative analyzed would have less-than-significant impacts associated with air quality, noise, human health and safety, and hazardous materials and wastes.

Based on the findings of this EA, the Proposed Action would not result in disproportionate environmental health or safety risks to children. Under EO 13045, environmental health and safety risks refer to "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)." Children are not allowed in the CATM Complex, and based on the findings of this EA, there would be no potential for the Proposed Action to expose children outside the CATM Complex to any environmental health and safety risks.

3. Affected Environment and Environmental Consequences

3.1 Air Quality and Climate Change

3.1.1 Regulatory Setting

3.1.1.1 Criteria Pollutants

Pursuant to the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS have been established for the following air pollutants, which are called criteria pollutants: carbon monoxide (CO), lead, nitrogen dioxide, ozone, sulfur dioxide (SO₂), and respirable particulate matter defined as particulate matter less than 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}) (Table 3-1). Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, and long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects.

An area (county or air basin) that meets the air quality standard for the criteria pollutants is designated as being in attainment. An area that does not meet the air quality standard for one of the criteria pollutants is designated as being in nonattainment for that standard and is subject to planning requirements to attain the standard. An area that currently meets the air quality standard but previously was classified as being in nonattainment is in maintenance for that standard. Areas may be designated as unclassifiable where insufficient information is available to make an attainment or nonattainment designation, and are treated as attainment areas. The area encompassed by MacDill AFB is currently classified as being in attainment for all criteria pollutants stipulated under the NAAQS.

Under the General Conformity rule established under the Clean Air Act, federal agencies must ensure that their actions conform to the state implementation plan in a nonattainment or maintenance area. The Proposed Action is within an attainment area; therefore, it is exempt from the General Conformity rule and does not require an associated air quality conformity analysis. There are established insignificance thresholds for use in General Conformity for nonattainment and maintenance areas; however, there are no established significance thresholds for attainment areas. In accordance with DAF air quality Environmental Impact Analysis Process (EIAP) guidance (AFCEC 2023a), the Prevention of Significant Deterioration (PSD) threshold of 250 tons/year for criteria pollutants (except for lead, which is 25 tons/year) can be used as an indicator of potentially significant air quality impacts under NEPA for attainment areas. The DAF quantifies emissions of criteria pollutants for NEPA assessments using its Air Conformity Applicability Model (ACAM).

Table 3-1. National Ambient Air Quality Standards

Pollutant	Primary/Secondary	Averaging Time	Level	Form
Carbon monoxide	Primary	8 hours	9 ppm	Not to be exceeded more than once per year
	Primary	1 hour	35 ppm	Not to be exceeded more than once per year
Lead	Primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Nitrogen dioxide	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and secondary	1 year	53 ppb	Annual mean
Ozone	Primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle pollution (PM _{2.5})	Primary	1 year	9 µg/m ³	Annual mean, averaged over 3 years
	Secondary	1 year	15 µg/m ³	Annual mean, averaged over 3 years
	Primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
Particle pollution (PM ₁₀)	Primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide	Primary	1 hour	75 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2024a

µg/m³ = microgram(s) per cubic meter; ppb = part(s) per billion; ppm = part(s) per million

3.1.1.2 Greenhouse Gases and Climate Change

Climate change refers to the variation in the Earth's climate over time. Climate change is known to be caused by natural processes such as variations in ocean currents and solar energy and by human emissions of greenhouse gases (GHGs), which are gases that trap heat in the Earth's atmosphere. GHGs are emitted by both natural processes and human activities and primarily include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Much of the CO₂ that humans release into the atmosphere is a by-product of energy use, such as the burning of fossil fuels. To compare GHGs with each other, each GHG quantity is translated into a common unit called the carbon dioxide equivalent (CO₂e).

On January 20, 2021, the president issued EO 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," which directs federal agencies to immediately take action to reduce GHG emissions and bolster resilience to the impacts of climate change. EO 13990 revoked EO 13783, "Promoting Energy Independence and Economic Growth," signed March 28, 2017, which annulled CEQ's final guidance on GHGs and climate change under NEPA, published August 1, 2016. On January 9, 2023, CEQ published its "National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change" (88 *Federal Register* 1196). This is currently interim

guidance to assist agencies in analyzing GHG and climate change effects of their proposed actions under NEPA while CEQ seeks public comment on the guidance.

3.1.1.2.1 GHG Emissions Evaluation

All air quality NEPA assessments conducted by the DAF are required to assess GHGs in accordance with *DAF Greenhouse Gas (GHG) & Climate Change Assessment Guide* (AFCEC 2023c). Based on this guidance, a GHG emissions evaluation should be conducted to quantify the GHG emissions from the proposed action, determine whether the action's emissions are insignificant, and conduct a relative significance assessment of the alternatives. GHGs are to be analyzed like any other air pollutant and quantified using ACAM. The GHG emissions evaluation is automated in ACAM.

The DAF has adopted the PSD threshold for GHG of 75,000 tons per year (tpy), or 68,039 metric tons per year (mtpy), as an indicator or threshold of insignificance for air quality impacts in all areas under NEPA (AFCEC 2023c). This indicator does not define a significant impact; however, it identifies actions that are insignificant. The DAF considers proposed actions (or alternatives) with a net change in GHG (CO₂e) emissions below 75,000 tpy as being too insignificant to warrant further consideration beyond the ACAM analysis. Actions with a net change in GHG emissions above 75,000 tpy, or 68,039 mtpy, are considered only potentially significant and require further analysis to determine whether they would have a significant impact.

The relative significance assessment considers the affected area and degree (intensity) of the proposed action's effects and uses the rule of reason and concept of proportionality to compare the alternatives' GHG contributions. This assessment involves calculating the percentage of each alternative's annual GHG emissions relative to the annual GHG emissions of the state where the action is proposed and to U.S. and global annual GHG emissions. These percentages are then compared to assess the relative significance of each alternative's annual GHG emissions in relation to or proportionally to regional, national, and global annual GHG emissions. State and U.S. emission estimates are based on 5-year averages of individual state-reported emissions, and global emissions are based on the assumption that U.S. GHG emissions are 13.4 percent of global GHG emissions. The relative significance assessment is automatically performed in ACAM.

3.1.1.2.2 Climate Change Evaluation

In addition to the GHG emissions evaluation, the 2023 DAF GHG guidance (AFCEC 2023c) requires a climate change evaluation to be conducted to assess the impact of the proposed action on climate change and the impact of climate change on the proposed action. In accordance with the 2023 interim CEQ GHG and climate change guidance (88 *Federal Register* 1196), additional context on GHG emissions should be provided by estimating the social costs (SC) of the GHG emissions, expressed as SC GHG, in U.S. dollars per metric ton. The impact of the proposed action on climate change is indirectly addressed by first estimating the theoretical SC GHG and then putting the values into a global context by performing a relative comparison of SC GHG. The SC GHG is a theoretical estimate of the long-term monetary damage (based on 2020 U.S. dollars) that may result from the GHG emissions and can be used to provide additional context on the overall impact of the action on climate change. The SC GHG assessment is automatically performed in ACAM. The SC GHG estimates are derived using the methodology and discount factors in *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990*, issued by the Interagency Working Group on Social Cost of Greenhouse Gases in February 2021 (IWGSCGHG 2021).

The relative comparison of the SC GHG considers the affected area and degree (intensity) of the proposed action's effects and uses the rule of reason and concept of proportionality to compare the alternatives' impacts on climate change on a regional and global scale. The relative comparison of SC GHG is automatically performed in ACAM and first involves calculating the percentage of each alternative's annual SC GHG relative to the annual SC GHG of the state where the action is proposed and to U.S. and global annual SC GHG. These percentages are then compared to provide additional perspective on the potential monetary impact of each alternative's GHG emissions.

As part of the climate change evaluation, the potential impacts of climate change on the proposed action and its environment should be qualitatively assessed. This assessment may inform the design and long-term use and maintenance of the project, with respect to flood control, stormwater management, shading, air conditioning, and other factors. The level of this assessment should be proportional to the proposed action's expected potential to affect climate change and vice versa. The 2023 DAF GHG guidance (AFCEC 2023c) suggests that the effects of climate change on a proposed action should be assessed qualitatively by first identifying which state-specific potential climate change impacts are applicable to the project location and then assessing those potential impacts on the project using the rule of reason and the concept of proportionality. The 2023 DAF GHG guidance also suggests assessing the impact of climate change on the environmental impacts of the proposed action.

3.1.2 Affected Environment

3.1.2.1 Emissions Sources

Hillsborough County is defined as the region of influence (ROI) for the analysis of air quality in this EA. State, U.S., and global GHG emissions are also evaluated to provide additional perspective on the action's potential impact on climate change in relation to regional and global GHG emissions. Hillsborough County is currently classified as being in attainment for all criteria pollutants stipulated under the NAAQS. Estimated annual emissions of criteria air pollutants and GHGs generated in Hillsborough County are published in EPA's National Emissions Inventory (NEI) every 3 years. These estimates include emissions from various point sources, which are tracked stationary sources such as factories and power plants; nonpoint sources, which are individually too small to report as point sources, such as residential heating; on-road mobile sources such as cars and trucks; and non-road mobile sources such as construction equipment. Some non-road mobile sources, such as aircraft emissions during landing and takeoff, are included in the point source category, whereas others such as marine vessels are included in the nonpoint source category. The NEI also includes emissions from major fire sources, including wildfires, prescribed fires, and agricultural fires. Starting with the 2020 NEI, major sources of fire are included in the nonpoint source category.

Air emissions in Hillsborough County originate primarily from various sources in the city of Tampa and other cities and unincorporated areas in the county including MacDill AFB. Countywide emissions primarily include those from burning of fossil fuels (for example, coal, oil, and natural gas), industrial and commercial facilities, vehicular traffic, military air operations, non-military flight activity, construction activity, and prescribed burning. MacDill AFB is identified as a minor source of air emissions based on air permitting regulations and currently operates under Minor Source Air Operation Permit No. 0570141-030-AO issued by the Hillsborough County Environmental Protection Commission (EPC). The primary emission sources at MacDill AFB are emergency internal combustion engines and generators. Of the 68 engines and generators at the base, there are 35 permitted diesel-fired emergency stationary compression ignition internal combustion engines and 2 permitted fire pump engines. None of these permitted stationary sources of air emissions are located within the CATM Complex.

3.1.2.2 Criteria Pollutant Emissions

Table 3-2 presents estimated annual emissions of criteria air pollutants and volatile organic compounds (VOCs) for Hillsborough County published in the 2020 NEI (EPA 2024b). These emission data are the most recent available and represent the baseline air emissions in the ROI for the alternatives analyzed. VOCs are not a criteria pollutant but are ozone precursors because ozone is created when VOCs combine with nitrogen oxides (NO_x) in the presence of sunlight.

Table 3-2. 2020 NEI Estimates of Annual Air Emissions (in tons/year) of Criteria Pollutants and VOCs for Hillsborough County, Florida

NO _x	CO	SO ₂	Lead	PM ₁₀	PM _{2.5}	VOCs
14,463	138,479	351	< 0.1	11,166	6,016	47,979

Source: EPA 2024b

3.1.2.3 GHG Emissions

Table 3-3 presents estimated Hillsborough County, state of Florida, U.S., and global GHG emissions. The CO_{2e} emissions are calculated as the sum of CO₂, CH₄, and NO_x after each is multiplied by its global warming potential multiplier, which for CO₂ is 1, for CH₄ is 25, and for NO_x is 298.

Table 3-3. Estimated GHG Emissions

Source	CO ₂	CH ₄	N ₂ O	CO _{2e}
Hillsborough County ^[a]	8,533,483	25,656	27,550	8,586,689
Florida ^[b]	227,404,647	552,428	58,049	228,015,124
United States ^[b]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
Global ^[c]	38,331,747,604	191,245,612	1,119,9313	38,534,192,522

^[a] 2020 NEI (EPA 2024b)

^[b] ACAM-generated estimate for 2025 emissions

^[c] Based on the assumption that U.S. GHG emissions are 13.4 percent of global GHG emissions (CCES 2018)

3.1.2.4 Climate Change

Global temperatures have increased since the beginning of the 20th century, and the rate of temperature increase has increased since 1970. Each of the past three decades has been successively warmer than any of the previous decades, and 2010 to 2019 has been the warmest decade on record. The average global surface temperature is estimated to be 1.09 degrees Celsius higher during the period from 2011 to 2020 than during the period from 1850 to 1900 (IPCC 2023). It is internationally recognized that human activities that emit GHGs are unequivocally contributing to global warming (IPCC 2023).

Temperatures in Florida have risen more than 2 degrees Fahrenheit since the beginning of the 20th century (NOAA NCEI 2022). The southern portion of Florida has warmed more than the rest of the state (EPA 2016). Annual total rainfall in Florida has varied widely from year to year since 1895. The data do not show an obvious trend of increasing rainfall in the state over time; however, the state has experienced near- or above-average numbers of 4-inch extreme precipitation events since 1995 (NOAA NCEI 2022). An increase in such extreme precipitation events would increase inland flooding and exacerbate coastal flooding along with sea level rise. Sea level rise is caused primarily by two factors related to global warming: the water added by melting land ice and the expansion of seawater as it warms. Global mean sea levels have increased by 0.2 meter (7.9 inches) from 1901 to 2018. Satellite data indicate that from 1993 to 2023, global sea levels have risen by approximately 99.8 millimeters (3.9 inches) (NASA 2023). For most purposes, Florida sea level rise can be considered similar to global sea level rise throughout the state's coastal areas (Merrifield et al. 2009).

Table 3-4 presents the annual SC GHG per metric ton for each GHG type, and Table 3-5 presents estimated state of Florida and U.S. SC GHG in 2020 U.S. dollars.

Table 3-4. Annual SC GHG per Metric Ton

Year	CO ₂	CH ₄	N ₂ O
2025	\$83.00	\$2,200.00	\$30,000.00
2026	\$84.00	\$2,300.00	\$30,000.00

Table 3-5. Estimated SC GHG in 2020 U.S. Dollars (in thousands)

Source ^[a]	CO ₂	CH ₄	N ₂ O	CO ₂ e
Florida ^[a]	\$18,874,585.70	\$1,215,340.97	\$1,741,465.95	\$21,831,392.62
United States ^[a]	\$426,325,696.86	\$56,379,205.70	\$45,021,229.08	\$527,726,131.63

^[a] ACAM-generated estimate

3.1.3 Environmental Consequences

3.1.3.1 Action Alternatives

3.1.3.1.1 Air Quality

The various stages of construction under Alternatives A through D would generate construction vehicle/equipment emissions and fugitive dust emissions. Under each alternative, these air emissions would vary daily, depending on the level and type of work conducted, and would be short term, lasting only for the duration of the construction period. Pollutants that would be emitted from the internal combustion engines of construction vehicles and equipment include certain criteria pollutants, VOCs, and certain GHGs (CO₂, CH₄, and N₂O).

Fugitive dust would be generated primarily by construction vehicle and equipment operation on dirt surfaces and by wind action on stockpiled materials. Generated fugitive dust would consist primarily of nontoxic particulate matter and would be controlled at the site by measures that include, but are not limited to, minimizing surface disturbance and construction traffic to the extent practicable, watering exposed surfaces, stabilizing exposed soils by seeding or mulching, applying gravel or other stabilizing material to dirt roads, enclosing or covering stockpiled material, and covering open-top haul trucks during transit.

For this EA, the DAF's ACAM, Version 5.0.23a, and the *Air Emissions Guide for Air Force Mobile Sources* (AFCEC 2023b) were used to estimate the construction equipment emissions and fugitive dust emissions that would be generated from construction activities under each alternative. The air emissions calculations are based on the estimated construction period for the project; however, the analysis considers that certain construction activities would not occur over the entire construction period. Air emissions associated only with construction are estimated for the alternatives. The Proposed Action would not affect the number of personnel who use the CATM Complex at MacDill AFB; therefore, there would be no change in air emissions associated with commuter traffic to and from the CATM Complex under any alternative.

As discussed, the Proposed Action is within an attainment area; therefore, it is exempt from the General Conformity rule and does not require an associated air quality conformity analysis. In accordance with DAF air quality EIAP guidance (AFCEC 2023a), the PSD threshold of 250 tons/year for criteria pollutants (except for lead, which is 25 tons/year) is considered an indicator of potentially significant air quality impacts under each alternative. Tables 3-6 and 3-7 present the maximum annual construction emissions of criteria pollutants and VOCs estimated for each alternative using ACAM, the indicator of potential significance for each pollutant, and the baseline ROI emissions from the 2020 NEI (EPA 2024b).

Table 3-6. Estimated 2025 Air Emissions (in tons/year) of Criteria Pollutants and VOCs under Each Alternative

Source	NO _x	CO	SO ₂	Lead	PM ₁₀	PM _{2.5}	VOCs
Alternative A	0.590	0.736	0.001	0.000	1.85	0.023	0.068
Alternative B	1.57	1.73	0.003	0.000	4.94	0.054	0.152
Alternative C	1.33	1.57	0.002	0.000	2.45	0.049	0.140
Alternative D	1.90	1.99	0.003	0.000	4.23	0.065	0.181
Indicator of Potential Significance ^[a]	250	250	250	25	250	250	250
ROI Baseline ^[b]	14,463	138,479	351	< 0.1	11,166	6,016	47,979

^[a] PSD thresholds (AFCEC 2023a)^[b] 2020 NEI emissions for Hillsborough County, Florida (EPA 2024b)**Table 3-7. Estimated 2026 Air Emissions (in tons/year) of Criteria Pollutants and VOCs under Each Alternative**

Source	NO _x	CO	SO ₂	Lead	PM ₁₀	PM _{2.5}	VOCs
Alternative D	1.37	1.79	0.003	0.000	0.050	0.046	0.171
Indicator of Potential Significance ^[a]	250	250	250	25	250	250	250
ROI Baseline ^[b]	14,463	138,479	351	< 0.1	11,166	6,016	47,979

^[a] PSD thresholds (AFCEC 2023a)^[b] 2020 NEI emissions for Hillsborough County, Florida (EPA 2024b)

As indicated in Table 3-6, estimated peak emissions of criteria pollutants and VOCs are lowest for Alternative A, which would involve the least earthwork among the alternatives. The highest emissions are estimated for Alternatives B and D. Alternative D would also have construction emissions in 2026, whereas the other alternatives would not have construction activity beyond 2025 (Table 3-7). The estimated annual air emissions presented for each alternative represent the net change (increase) in air emissions relative to the No Action Alternative. As indicated, the estimated net change in emissions of criteria pollutants and VOCs under each alternative is well below the respective indicators of potential significance for the emissions. The net change in emissions under each alternative would be a small fraction of the total emissions generated annually in the ROI. This comparison is made to provide additional perspective on the degree of the air quality impact under each alternative. With respect to the established PSD indicators of potential significance and ROI baseline emissions, the increase in emissions of criteria pollutants and VOCs under each alternative would be minor and not significant.

Peak fugitive dust emissions from construction activities under the alternatives are estimated to range from 1.85 tons of PM₁₀ under Alternative A to 4.94 tons of PM₁₀ under Alternative B; these emissions are part of the total PM₁₀ emissions identified in Tables 3-6 and 3-7. Generated fugitive dust would be controlled at the site as previously discussed, and no adverse impacts from fugitive dust emissions such as reduced visibility are expected under any of the alternatives.

In conclusion, based on the quantities of criteria pollutants, VOCs, and fugitive dust estimated to be generated, reconstruction of the CATM Complex under each action alternative would have a less-than-significant impact on air quality. There would be no effect on air quality from operation of the reconstructed CATM Complex under each alternative. None of the alternatives would affect permitted stationary sources of air emissions at MacDill AFB.

3.1.3.1.2 GHGs and Climate Change

Table 3-8 presents the maximum annual construction emissions of GHGs estimated for each alternative using ACAM. As indicated, the estimated annual emissions of GHGs range from 112 mtpy CO₂e for Alternative A, which would involve the least earthwork, to 521 mtpy CO₂e for Alternative D, which would involve the most earthwork. Annual total GHG (CO₂e) emissions under each alternative would be well below the indicator of insignificance for GHG emissions, which is 68,039 mtpy (AFCEC 2023c). The DAF considers actions with a net change in GHG emissions below this amount as being too insignificant to warrant further consideration beyond the ACAM analysis.

Table 3-8. Estimated Annual Air Emissions (in metric tons/year) of GHGs under Each Alternative

Source	CO ₂	CH ₄	N ₂ O	CO ₂ e
Alternative A	111	0.004	0.002	112
Alternative B	424	0.012	0.029	433
Alternative C	311	0.010	0.015	315
Alternative D ^[a]	509	0.014	0.038	521
Insignificance Threshold ^[b]	Not applicable	Not applicable	Not applicable	68,039

^[a] Based on estimated 2025 emissions

^[b] Based on PSD threshold for CO₂e (AFCEC 2023c)

Table 3-9 compares the alternatives with respect to how their GHG emissions relate to state of Florida, U.S., and global GHG emissions. This relative significance assessment is automatically performed in ACAM and provides additional context on the relative amounts of GHG emissions that would be generated under the alternatives. Overall, the differences in GHG emissions among the alternatives are not substantial, and the differences among the alternatives are considered less meaningful when the emissions are compared with regional and global GHG emissions. Based on this relative comparison analysis, the alternatives would have comparable GHG emissions and none of the alternatives would have a significantly greater GHG contribution relative to the others or relative to regional or global emission levels.

Table 3-9. Percent of GHG Emissions under Alternatives to Total State, National, and Global GHG Emissions

Source ^[a]	Alternative	CO ₂	CH ₄	N ₂ O	CO ₂ e
Florida	A	0.00004882%	0.00000078%	0.00000308%	0.00004897%
	B	0.00018655%	0.00000214%	0.00005038%	0.00019000%
	C	0.00013666%	0.00000181%	0.00002564%	0.00013835%
	D	0.00011830%	0.00000149%	0.00002606%	0.00012005%
U.S.	A	0.00000216%	0.00000002%	0.00000012%	0.00000216%
	B	0.00000826%	0.00000005%	0.00000195%	0.00000839%
	C	0.00000605%	0.00000004%	0.00000099%	0.00000611%
	D	0.00000524%	0.00000003%	0.00000101%	0.00000530%
Global	A	Not available	Not available	Not available	0.00000029%
	B	Not available	Not available	Not available	0.00000098%
	C	Not available	Not available	Not available	0.00000067%
	D	Not available	Not available	Not available	0.00000100%

^[a] ACAM-generated estimate

Table 3-10 presents the annual SC GHG per year for each alternative. These costs are automatically calculated in ACAM and are derived by multiplying the annual GHG emissions for a given year by the annual SC GHG per metric ton for the corresponding GHGs in Table 3-4.

Table 3-10. Annual SC GHG per Year for Each Alternative

Alternative	CO ₂	CH ₄	N ₂ O	CO ₂ e
A	\$9,210	\$10.00	\$50.00	\$9,280
B	\$35,210	\$30.00	\$880.00	\$36,110
C	\$25,790	\$20.00	\$450.00	\$26,260
D ^[a]	\$42,250	\$30.00	\$1,130	\$43,410

^[a] Based on estimated 2025 emissions

Table 3-11 compares the alternatives with respect to how their SC GHG relate to state of Florida, U.S., and global SC GHG. The relative comparison of SC GHG is automatically performed in ACAM and provides additional perspective on the potential monetary impact of each alternative's GHG emissions.

Table 3-11. Percent of SC GHG under Alternatives to Total State, National, and Global SC GHG

Source ^[a]	Alternative	CO ₂	CH ₄	N ₂ O	CO ₂ e
Florida	A	0.00004882%	0.00000078%	0.00000308%	0.00004250%
	B	0.00018655%	0.00000214%	0.00005038%	0.00016542%
	C	0.00013666%	0.00000181%	0.00002564%	0.00012030%
	D	0.00011695%	0.00000147%	0.00002577%	0.00010320%
U.S.	A	0.00000216%	0.00000002%	0.00000012%	0.00000176%
	B	0.00000826%	0.00000005%	0.00000195%	0.00000684%
	C	0.00000605%	0.00000004%	0.00000099%	0.00000498%
	D	0.00000518%	0.00000003%	0.00000100%	0.00000427%
Global	A	Not available	Not available	Not available	0.00000024%
	B	Not available	Not available	Not available	0.00000080%
	C	Not available	Not available	Not available	0.00000055%
	D	Not available	Not available	Not available	0.00000082%

^[a] ACAM-generated estimate

In summary, the quantities of GHGs estimated that would be generated under each alternative would be well below the insignificance threshold of 68,039 mtpy established by DAF for GHG emissions and, therefore, would be insignificant. The differences in GHG emissions among the alternatives would not be substantial, and all the alternatives would have a less-than-significant impact on climate change.

Climate changes over the past century are discussed in Section 3.1.2.4. Global temperatures and sea levels are predicted to continue to rise in response to GHG emissions over the foreseeable future (IPCC 2023). Extreme precipitation events are also expected to increase in certain areas, including Florida. Based on coastal zone modeling, sea level rise is predicted to decrease the land area of MacDill AFB by approximately 6.7 percent in 2035 and 17.7 percent in 2065 (DAF 2022). If these predictions hold true, MacDill AFB would become more prone to flooding from storm surges and rainfall over time, especially during the wet season. Other climatic changes that could potentially affect the base include more frequent and intense heat waves and storm events.

Due to its low elevations, the CATM Complex currently experiences flooding during heavy rain events. Due to its proximity to the waters of Tampa Bay and tidal areas, portions of the CATM Complex, including the entire field east of the ranges, become inundated during strong storm surges, which may also be intensified by strong tides. The potential for the CATM Complex and surrounding areas to be inundated and negatively impacted by tidally influenced storm surges is expected to increase in the future with rising sea levels. Any increase in extreme precipitation events would also increase inland flooding and exacerbate the flooding potential at the site. The associated impact on operation of the CATM Complex would depend on the magnitude of such changes and the design features that are incorporated to minimize flooding potential. Near-term climate changes are expected to have no appreciable effect on operation of the reconstructed CATM Complex under any of the alternatives. However, over time as sea levels continue to rise, additional flood prevention measures would likely need to be incorporated for each alternative for continued operation of the CATM Complex. With respect to environmental impacts, the alternatives would differ primarily in how much wetland area they would impact. Alternative A would not directly impact wetlands, whereas the other alternatives would result in wetland impacts. Alternative D would involve the removal of all the earthen berms and infrastructure at the CATM Complex as part of range closure, which could result in the natural restoration and creation of wetland area within the former CATM Complex footprint through regular tidal inundation. Climate change and rising sea levels could

increase the rate and extent of wetland creation at the site under this alternative. In contrast, Alternatives B and C have greater footprints and would impact more wetland area. Under these alternatives, sea level rise may inundate areas adjacent to the new ranges, which would be elevated, which could result in flooding and potential wetland creation in those areas.

3.1.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. There would be no change in air emissions associated with construction or any other new activity; therefore, the No Action Alternative would have no effect on air quality or climate change. Without site drainage improvements and incorporation of flood-control measures, continuing sea level rise and other changes in climatic conditions over time are expected to increase the potential for the CATM Complex to be adversely impacted by flooding.

3.2 Water Resources

3.2.1 Regulatory Setting

Water resources in this EA refer primarily to wetlands, surface water, floodplains, and groundwater. EPA and the U.S. Army Corps of Engineers (USACE) jointly define wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (EPA 2023). EO 11990, “Protection of Wetlands,” requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Wetlands are considered to be surface waters, which also include streams, lakes, and other bodies of water above ground. 32 CFR 989.14(g) requires preparation of a FONPA when a proposed federal action is in wetlands (or floodplains).

Wetlands and other surface water bodies in Florida are under the regulatory jurisdiction of the federal Clean Water Act (CWA) Section 404 program and State of Florida Environmental Resource Permit (ERP) program, unless they qualify to be exempted. Wetlands and other surface waters in Hillsborough County, Florida, are also regulated by Hillsborough County’s wetlands program.

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States (WOTUS), including wetlands. Under the federal Section 404 program, no discharge of dredged or fill material may be permitted if a practicable alternative exists that is less damaging to the aquatic environment, or if the nation’s waters would be significantly degraded. The Section 404 program is jointly administered by USACE and EPA, with USACE being responsible for Section 404 permit decisions.

The “Revised Definition of ‘Waters of the United States’” rule, commonly referred to as the January 2023 Rule, was published in the *Federal Register* on January 18, 2023, and took effect on March 20, 2023. Under the January 2023 Rule, WOTUS include (1) “traditional navigable waters, the territorial seas, and interstate waters,” (2) “impoundments of ‘[WOTUS],’” (3) qualifying tributaries to WOTUS, (4) qualifying wetlands adjacent to WOTUS, and (5) certain “intrastate lakes and ponds, streams, or wetlands.” EPA and USACE issued a rule that amends the “Revised Definition of ‘Waters of the United States’” rule to conform the definition of WOTUS to the U.S. Supreme Court’s May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*. The conforming rule, “Revised Definition of ‘Waters of the United States’; Conforming,” became effective on September 8, 2023. The conforming rule removed the significant nexus standard that was added to the rule based on the Supreme Court’s decision in the case of *Rapanos v. United States* for determining whether a water qualifies as being jurisdictional. In response to ongoing litigation against the January 2023 Rule, EPA and USACE are currently implementing the January 2023 Rule, as amended by the conforming rule, in 23 states. In the other 27 states, including Florida, the agencies are interpreting WOTUS consistent with the pre-2015 regulatory regime and the Supreme Court’s decision in *Sackett* until further notice.

On December 22, 2020, DEP began sharing the responsibility of administering the CWA Section 404 program in the state of Florida with USACE. Under the State 404 Program, DEP is responsible for the permitting of certain types of WOTUS in the state, referred to as state-assumed waters. USACE remains responsible for the permitting of retained waters, which include navigable waters up to the ordinary high water mark, all tidal waters up to the mean high water mark, and adjacent wetlands within 300 feet of these waters. All WOTUS that are not retained waters are state-assumed waters that are permitted by DEP under the State 404 Program.

On February 15, 2024, a D.C. Circuit Court judge revoked the State of Florida's CWA Section 404 permitting authority, finding that EPA failed to account for risks to federally listed species when it granted Florida partial authority over CWA Section 404 permitting in Florida. DEP filed a motion on February 26, 2024, for a limited stay on this legal decision. If the limited stay is granted, all current and future Section 404 permit applications in Florida that may affect federally listed species would be permitted under USACE authority, and all permits without impacts to federally listed species could progress with DEP in accordance with the State 404 Program as usual. If the limited stay is not granted, all current and future Section 404 permits in Florida would remain under USACE jurisdiction.

The State of Florida also regulates wetlands and other surface waters through the ERP program, which is different from the State 404 Program. The ERP program is in effect statewide and is implemented jointly by DEP and the state's five water management districts under operating agreements that provide a division of responsibilities among the agencies. The ERP program regulates dredging and filling in wetlands and other surface waters, as well as activities in uplands that generate stormwater runoff or otherwise alter surface water flows. Per these regulations, activities that create a total of more than 4,000 ft² of impervious and semi-impervious surface area subject to vehicular traffic or a total of more than 9,000 ft² of impervious and semi-impervious surface area require an ERP from DEP or one of the state's water management districts (Chapter 62-330.020, *Florida Administrative Code* [FAC]).

The Hillsborough County EPC regulates wetlands and other surface waters in Hillsborough County, Florida, under the authority granted by the Environmental Protection Act of Hillsborough County (Chapter 84-446, *Laws of Florida*), as amended. EPC regulations pertaining to wetlands are specified in Chapter 1-1-11, "Wetlands," of the *Rules of the Environmental Protection Commission of Hillsborough County*, herein referred to as the Rules of the EPC. Development within wetlands or other surface waters in Hillsborough County must be authorized by the Wetlands Management Division of EPC. EPC has delegation agreements with the Tampa Port Authority and DEP for the delegation of wetland permitting responsibilities in Hillsborough County.

Point-source stormwater discharges in Florida are regulated by DEP under the National Pollutant Discharge Elimination System (NPDES) stormwater program. Under this program, a project that would disturb 1 acre or more of land is required to obtain an *NPDES Generic Permit for Stormwater Discharges from Large and Small Construction Activities* (DEP Form 62-621.300(4)(a)), which is issued by DEP. This permit is often referred to as a Construction Generic Permit or stormwater construction permit. As part of this permit, the proponent of the project is required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which outlines the best management practices (BMPs) and engineering controls to be used to prevent and minimize erosion, sedimentation, and pollution during construction.

EO 11988, "Floodplain Management," requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

3.2.2 Affected Environment

3.2.2.1 Wetlands and Surface Water

MacDill AFB is located within the Tampa Bay Watershed, which encompasses approximately 2,200 square miles in Hillsborough, Manatee, Pasco, Pinellas, Polk, and Sarasota Counties. Major rivers within the Tampa Bay Watershed include the Alafia, Hillsborough, Manatee, and Little Manatee Rivers, all of which drain into Tampa Bay. The primary surface water body in the vicinity of the CATM Complex is Raccoon Creek, which is

located approximately 320 feet west of the impact berm of the North Range. Raccoon Creek flows southward and drains into Tampa Bay.

The wetlands and other surface waters around the CATM Complex and within the footprints of the alternatives were surveyed and delineated in February, March, and April 2024 for this EA. The findings of these surveys are summarized in this section; the detailed results of the surveys are presented in the Wetland Evaluation Report prepared for the Proposed Action (DAF 2024). Prior to the field surveys, a desktop analysis was conducted to preliminarily assess site conditions and identify potential onsite wetland types and locations. The desktop analysis primarily included review of the MacDill AFB Geographic Information System (GIS) database, National Wetlands Inventory (NWI) mapping, aerial photography, and Natural Resources Conservation Service (NRCS) soil survey data.

NWI mapping was developed for the purposes of management and policymaking and is based on aerial image analysis with limited field verification. NWI mapping was used only for pre-survey planning and is not included in any of the wetland mapping prepared from the wetland delineations conducted for this EA. The wetland delineations were conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)* (USACE 2010), and the Florida unified wetland delineation methodology detailed in Chapter 62-340, FAC. Identified wetland boundaries were marked by flagging and a handheld Global Positioning System (GPS) unit with sub-meter accuracy. The collected GPS data were processed and exported to GIS software to create the wetland mapping. The identified wetlands and other surface waters are classified in accordance with the NWI classification system as described in *Classification of Wetlands and Deepwater Habitats of the United States* (FGDC 2013).

The wetlands and other surface waters identified during the surveys are presented in Table 3-12 and shown on Figure 3-1. Based on the findings of the surveys, Wetlands A, B, C, and D and Surface Waters A and B are all WOTUS subject to federal CWA Section 404 program regulations, as well as state jurisdictional wetlands/waters subject to State of Florida ERP program regulations. Based on the definition of WOTUS under the pre-2015 regulatory regime and the *Sackett* decision, Surface Waters A and B and the tidal drainage ditch components of Wetlands B and D are all permanent waters and all the identified wetlands have continuous surface connections to these jurisdictional waters and, therefore, are jurisdictional adjacent wetlands. Detailed descriptions of the identified wetlands and other surface waters are provided in the subsections that follow.

Table 3-12. Wetland/Waters Identified During Surveys

Wetland/Water	Type	NWI Classification
Wetland A	Wet Field	E2EM
Wetland B	Mangrove Forest, Tidal Drainage Ditch	E2FO, R1UBx
Wetland C	Estuarine Shrub Wetland	E2SS
Wetland D	Estuarine Shrub Wetland, Tidal Drainage Ditch	E2SS, R1UBx
Surface Water A	Tidal Drainage Ditch	R1UBx
Surface Water B	Tidal Drainage Ditch	R1UBx

E2EM = Estuarine Intertidal Emergent; E2FO = Estuarine Intertidal Forested; E2SS = Estuarine Intertidal Scrub-Shrub; R1UBx = Riverine Tidal Unconsolidated Bottom Excavated

Figure 3-1. Wetlands/Waters in Study Area

Four wetlands (Wetlands A, B, C, and D) and two surface water bodies (Surface Waters A and B) were identified in the study area. Wetlands B and D also include surface water bodies (tidal drainage ditches) within their boundaries. The identified wetlands and other surface waters are hydrologically connected and ultimately drain into Raccoon Creek west of the study area. Raccoon Creek flows southward and drains into Tampa Bay.

3.2.2.1.1 Wetland A

Wetland A is a field that extends from the eastern side of the CATM Complex to Marina Bay Drive (Figure 3-1). This field functions as an estuarine emergent wetland (NWI classification = E2EM) because it receives tidal flow during strong storm surges and is dominated by estuarine plant species. Wetland A is maintained by mowing when it is not inundated, and this wetland is not identified on NWI mapping. As surveyed, Wetland A is approximately 4.5 acres.

Wetland A functions as a high salt marsh and also as a salt flat in its southwestern portion. It is a shallow basin that is lower in elevation than the land that borders it to the west, north, and east. Wetland A borders

a roadside drainage ditch to the east that runs parallel to Marina Bay Drive and a larger tidal drainage ditch to the south that is part of Wetland B. Wetland A is contiguous with Wetland B and is treated as a separate wetland in this EA to facilitate the analyses of wetland impacts and mitigation. Wetland A is hydrated primarily by rainfall and also receives tidal flow during strong storm surges. Range personnel indicate that Wetland A becomes inundated by heavy rainfall as well as by strong tidal surges. Portions of Wetland A were observed to be inundated the day after a rain event when inspected in April 2024 for this EA.

Vegetation within the surveyed boundaries of Wetland A consists mostly of estuarine herbaceous plant species and is dominated by salt grass (*Distichlis spicata*), saltwort (*Batis maritima*), sea oxeye (*Borrchia frutescens*), and sea purslane (*Sesuvium portulacastrum*). Overall vegetative cover in Wetland A is approximately 85 to 95 percent.

3.2.2.1.2 Wetland B

Wetland B consists of mangrove forest (NWI classification = E2FO) and tidal drainage ditch (NWI classification = R1UBx) and extends from near the southwestern corner of the North Range to Marina Bay Drive (Figure 3-1). Portions of Wetland B are identified on NWI mapping. The boundaries of Wetland B extend beyond the study area; therefore, its total size is not calculated.

Wetland B receives stormwater runoff through a culvert in the southeastern portion of the CATM Complex. It is tidally influenced with a direct connection to Raccoon Creek west of the CATM Complex. Within the area surveyed, the tidal drainage ditch portion of Wetland B has a channel that ranges from approximately 8 to 15 feet wide and moderately sloped banks that range from approximately 3 to 5 feet high. During the survey, the ditch had approximately 4 to 8 inches of water with no obvious flow.

The canopy and subcanopy of the mangrove forest portion of Wetland B are dominated by black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), Brazilian pepper tree (*Schinus terebinthifolius*), and saltbush (*Baccharis halimifolia*). Dominant herbaceous species include marsh elder (*Iva frutescens*), black needlerush (*Juncus roemerianus*), salt grass, and swamp flatsedge (*Cyperus ligularis*). Overall vegetative cover in the mangrove forest portion is approximately 80 to 90 percent. The tidal drainage ditch portion of Wetland B is densely vegetated with red mangrove (*Rhizophora mangle*), black mangrove, and white mangrove. Overall vegetative cover in the tidal ditch portion is approximately 95 to 100 percent.

3.2.2.1.3 Wetland C

Wetland C is an estuarine shrub wetland (NWI classification = E2SS) located north of the North Range (Figure 3-1). Wetland C is identified on NWI mapping. The boundaries of Wetland C extend beyond the study area; therefore, its total size is not calculated.

Wetland C is tidally influenced and is hydrologically connected to Wetland D and Surface Waters A and B; all these systems are connected to Raccoon Creek west of the CATM Complex. Saltbush, black mangrove and Brazilian pepper tree are the dominant shrubs in Wetland C. The groundcover is dominated by salt grass and marsh elder. Overall vegetative cover in Wetland C is approximately 90 to 95 percent.

3.2.2.1.4 Wetland D

Wetland D consists of estuarine shrub wetland (NWI classification = E2SS) and tidal drainage ditch (NWI classification = R1UBx) and is located east and northeast of the North Range (Figure 3-1). Portions of Wetland D are identified on NWI mapping. The boundaries of Wetland D extend beyond the study area; therefore, its total size is not calculated.

Wetland D is tidally influenced and has a direct connection to Raccoon Creek west of the CATM Complex. It is hydrologically connected to Wetland C and Surface Waters A and B. Wetland D receives stormwater runoff through a culvert in the northeastern portion of the CATM Complex. Within the area surveyed, the tidal drainage ditch portion of Wetland D has a channel that ranges from approximately 6 to 8 feet wide and shallow banks that range from approximately 3 to 4 feet high. During the survey, the ditch had approximately 2 to 4 inches of water with no obvious flow.

The estuarine shrub portion of Wetland D is dominated by Brazilian pepper tree and saltbush shrubs and has sparse tree cover dominated by cabbage palm (*Sabal palmetto*). The groundcover in this portion is dominated by salt grass, marsh elder, swamp flatsedge, and broom sedge (*Andropogon virginicus*). Overall vegetative cover in the estuarine shrub wetland portion is approximately 85 to 90 percent. The embankments of the tidal drainage ditch portion of Wetland D are vegetated with black mangrove, white mangrove, and Brazilian pepper tree. Overall vegetative cover in the tidal ditch portion is approximately 80 to 85 percent.

3.2.2.1.5 Surface Water A

Surface Water A is a tidal drainage ditch (NWI classification = R1UBx) located north of the North Range (Figure 3-1). Surface Water A is identified on NWI mapping. The boundaries of Surface Water A extend beyond the study area; therefore, its total size is not calculated.

Surface Water A is tidally influenced and has a direct connection to Raccoon Creek west of the CATM Complex. It is hydrologically connected to Wetlands C and D and Surface Water B. Within the area surveyed, Surface Water A has a channel that ranges from approximately 12 to 15 feet wide and shallow banks that range from approximately 3 to 4 feet high. During the survey, the ditch had approximately 3 to 7 inches of water with no obvious flow. The embankments of Surface Water A are dominated by black mangrove, white mangrove, and Brazilian pepper tree. Overall vegetative cover in Surface Water A is approximately 85 to 90 percent.

3.2.2.1.6 Surface Water B

Surface Water B is a tidal drainage ditch (NWI classification = R1UBx) located northeast of the CATM Complex (Figure 2-1). Surface Water B is identified on NWI mapping. The boundaries of Surface Water B extend beyond the study area; therefore, its total size is not calculated.

Surface Water B is tidally influenced and is hydrologically connected to Wetlands C and D, Surface Water A, and a tidal drainage ditch network farther to the north, which also drains to Raccoon Creek. Within the area surveyed, Surface Water B has a channel that ranges from approximately 10 to 15 feet wide and shallow banks that range from approximately 2 to 4 feet high. During the survey, the ditch had approximately 6 to 12 inches of water with no obvious flow. The embankments of Surface Water B are dominated by Brazilian pepper tree, black mangrove, giant leather fern (*Acrostichum danaeifolium*), and marsh elder. Overall vegetative cover in Surface Water B is approximately 80 to 85 percent.

3.2.2.2 Floodplains

The 100-year floodplain is the area covered by water in the event of a 100-year flood, which is a flood that has a 1 percent chance of being equaled or exceeded in magnitude in any given year. The 500-year floodplain is the area covered by water in the event of a 500-year flood, which is a flood that has a 0.2 percent chance of being equaled or exceeded in magnitude in any given year. Floodplains are primarily associated with perennial river systems and low-lying areas near the coast.

Due to its low land elevations and proximity to Tampa Bay, MacDill AFB is prone to flooding from strong storm surges and rainfall that occur during tropical storms and hurricanes; the base also receives torrential rainfall regularly during the wet summer season (DAF 2022). Approximately 93 percent of MacDill AFB is in the 100-year coastal floodplain (DAF 2022). The remainder of base's landmass is in the 500-year coastal floodplain or outside the floodplain. The portions of the base that are outside the floodplain are mostly designated for airfield operations. The CATM Complex and surrounding area is in the 100-year floodplain.

3.2.2.3 Groundwater

Groundwater is water that occupies the pore spaces in subsurface rocks and sediments. MacDill AFB is located within the southern west-central Florida groundwater basin. The surficial aquifer system at the base is approximately 20 feet thick and consists primarily of sand, clayey sand, and shell (DAF 2022). This aquifer is recharged via direct infiltration of rainwater. Depths to groundwater at MacDill AFB (top of surficial aquifer) typically range from just below land surface (bls) to approximately 5 feet bls, depending

on topography and seasonal rainfall levels (DAF 2022). The surficial aquifer is not used at MacDill AFB but is used to supply small irrigation systems outside the base.

The surficial aquifer is underlain by heterogeneous calcareous clays and limestone formations having variable permeability. This clay/limestone zone varies in thickness across MacDill AFB; it does not occur in some areas in the northeastern portion of the base, and it can be up to 40 feet thick in the southern portion of the base (DAF 2022). The clay/limestone zone is underlain by the Floridan Aquifer, which is the most important aquifer in Florida with respect to groundwater volume and quality. The Floridan Aquifer supplies most of the water used for domestic, urban, and agricultural purposes in the state. It consists primarily of limestone and dolomite, and under MacDill AFB, it is approximately 3,400 feet thick (USGS 1990). MacDill AFB is a discharge zone for the Floridan Aquifer; water from the aquifer flows upward to the land surface at the base. There are no potable water wells at MacDill AFB; the base obtains potable water from the City of Tampa. The City's water supply is a combination of groundwater from the Floridan Aquifer and surface water from the Hillsborough River.

3.2.3 Environmental Consequences

3.2.3.1 Action Alternatives

3.2.3.1.1 Wetlands and Surface Water

Wetland Impacts

The wetland impacts that would result under each action alternative are presented in Table 3-13 and shown on Figures 3-2 through 3-5. As indicated in Table 3-13, no wetland impacts would result from the implementation of Alternative A. Under Alternative A, the proposed new perimeter fence would cross Wetland B and Wetland D near the existing culverts in these wetlands (Figure 3-2). However, the fence would be constructed to extend over and across both wetlands without impacting them. No portion of the fence would be installed within the boundaries of either wetland, and the segments of the fence that are extended across the wetlands would not result in any shading or otherwise degrade the quality or functionality of the wetlands. The proposed upgrading of the berms of the North and South Ranges under Alternative A would not extend beyond the outer base of the berms and, therefore, would not impact any wetlands. Construction laydown areas for Alternative A and for the other alternatives would not be located in wetlands and would not otherwise impact wetlands or other surface waters.

Implementation of Alternative B is estimated to impact a total of 2.76 acres of wetland. Most of this impact would be to Wetland A (2.53 acres), which is maintained field that qualifies as an estuarine emergent (E2EM) wetland. This wetland would be impacted by fill that would be added for the interior of the new range and by construction of berms and firing line infrastructure for the range (Figure 3-3). The remaining 0.23 acre of impact would be to Wetlands B and D, which consist of a mosaic of estuarine forested (mangrove) and shrub wetlands (E2FO and E2SS) and tidal drainage ditches (R1UBx) that are densely coved by mangroves. These wetlands would be impacted by berm construction for the new range (Figure 3-3).

Implementation of Alternative C is estimated to impact a total of 3.46 acres of wetland. Most of this impact would be to Wetland A (3.35 acres), which would be impacted by fill for the interiors of the new ranges and construction of berms and firing line infrastructure for the ranges (Figure 3-4). The remaining 0.11 acre of impact would be to Wetland D, which would be impacted by berm construction for the new ranges (Figure 3-4).

Implementation of Alternative D is estimated to impact a total of 0.16 acre of Wetland D and 0.11 acre of Surface Water B, which is a tidal drainage ditch. As shown on Figure 3-5, the southwestern portion of the Alternative D footprint is located within Wetland D. Construction of the new indoor range under this alternative would displace the wetland area shown within the footprint. The ditch would be impacted at its eastern end, which is its most landward extent. This portion of the ditch would be displaced by the construction of the new indoor range under this alternative.

Table 3-13. Estimated Wetland Impacts under the Alternatives

Alternative	Wetland/Water	Impact Acres	Impact Type
A	Not available	0	Not applicable
B	Wetland A	2.53	Range interior fill, berm construction, and firing line construction
	Wetland B	0.12	Berm construction
	Wetland D	0.11	Range interior fill and berm construction
C	Wetland A	3.35	Range interior fill, berm construction, and firing line construction
	Wetland D	0.11	Range interior fill and berm construction
D	Wetland D	0.16	Range construction
	Surface Water B	0.11	Range construction

Figure 3-2. Wetland Impacts under Alternative A

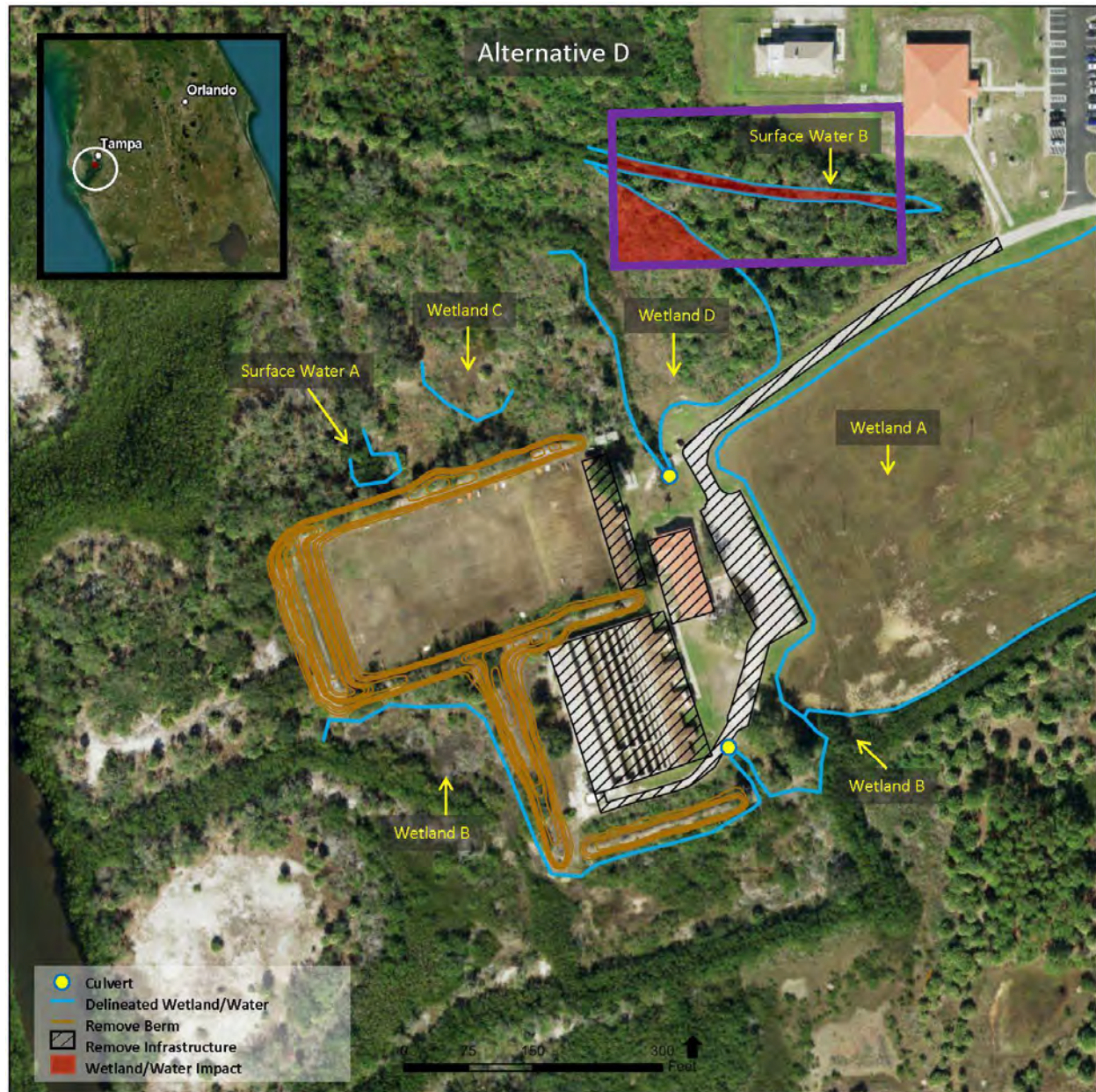


Figure 3-3. Wetland Impacts under Alternative B



Figure 3-4. Wetland Impacts under Alternative C



Figure 3-5. Wetland Impacts under Alternative D

The wetland impacts and associated required mitigation for Alternatives B, C, or D would be permitted and authorized through the federal CWA Section 404 permitting program, State of Florida ERP program, and Hillsborough County wetlands program as discussed. Federal Section 404 permitting would proceed through the USACE Jacksonville District (Tampa Office), state ERP permitting would proceed through the Southwest Florida Water Management District (SWFWMD) Tampa Office, and county wetlands permitting would proceed through the Hillsborough County EPC Tampa Office.

There are no practicable alternatives to reconstructing the CATM Complex in wetlands under Alternatives B, C, and D based on the extensive coverage of wetlands adjacent to the CATM Complex and the space needed for these alternatives. As discussed, reasonable alternatives for the Proposed Action must be in proximity to the CATM classroom training facility adjacent to the CATM small arms ranges. Based on the wetland coverage in the area, wetland impacts would be unavoidable under these alternatives, regardless of range layout. Alternative A, the preferred alternative, would not result in any

wetland impacts and, therefore, would be a practicable alternative to the implementation of Alternatives B, C, or D.

Wetland Mitigation

Under Section 404(b)(1) of the CWA, permit applicants are required to show that they have, to the extent practicable, taken steps to avoid impacts to WOTUS, minimize potential impacts to WOTUS once they have avoided impacts, and provide compensatory mitigation for any remaining unavoidable impacts. Under 33 CFR 332, compensatory mitigation means restoration, creation, enhancement, and/or preservation of wetlands. In 2008, USACE and EPA issued revised regulations governing compensatory wetland mitigation. These regulations, collectively referred to as the Compensatory Mitigation Rule, established standards for all three mitigation mechanisms: mitigation banks, in-lieu fee programs, and permittee-responsible mitigation. Because mitigation banks are considered the most reliable form of compensatory mitigation, the Compensatory Mitigation Rule gives preference to this mechanism when appropriate credits are available.

Compensatory wetland mitigation would be required to offset wetland impacts that would result under Alternatives B, C, or D. As discussed, Alternative A, which is the preferred alternative, would not result in any wetlands impacts and, therefore, would not require wetland mitigation. In accordance with the Compensatory Mitigation Rule, the use of a wetland mitigation bank would be the preferred form of mitigation for Alternative B, C, or D if appropriate mitigation bank credits are available for the proposed wetland impacts. There are two mitigation banks that have service areas that cover MacDill AFB: the Tampa Bay Mitigation Bank (TBMB) and Mangrove Point Mitigation Bank (MPMB). The TBMB has been in service since 2008 and has sold most of its generated wetland credits. Based on the TBMB's credit ledger, it does not have any remaining estuarine emergent or estuarine forested credits available for sale, which would be needed to offset the impacts that would be incurred under Alternatives B, C, or D. The MPMB, however, does have both estuarine emergent and estuarine forested credits available for sale. There are no in-lieu fee programs that MacDill AFB can use.

This EA assumes that the compensatory wetland mitigation required to offset wetland impacts under all the alternatives would be provided by purchasing wetland mitigation credits from the MPMB. It is noted that MacDill AFB has successfully performed permittee-responsible mitigation in the past to offset wetland impacts and may prefer to perform permittee-responsible mitigation over using a mitigation bank depending on the project—for example, to improve coastal resilience of the base. The MPMB is a relatively new mitigation bank that was approved in 2020. It encompasses 469 acres on the eastern side of Tampa Bay, southeast of MacDill AFB. Credit needs at the MPMB are determined using the Uniform Mitigation Assessment Method (UMAM). The UMAM analyses for the mitigation bank credits required for Alternatives B, C, and D are presented in Tables 3-14, 3-15, and 3-16, respectively. The UMAM scores were determined based on the findings of the wetland surveys conducted for the project.

Table 3-14. UMAM Analysis for Alternative B

Wetland	Impact Acres	Location and Landscape Support		Water Environment		Community Structure		Total Score		Delta	FL
		Current	With	Current	With	Current	With	Current	With		
Wetland A (E2EM)	2.53	4	0	5	0	4	0	0.43	0	0.43	1.1
Wetland B (E2FO, R1UBx)	0.12	7	0	8	0	8	0	0.77	0	0.77	0.09
Wetland D (E2SS, R1UBx)	0.09	6	0	7	0	7	0	0.67	0	0.67	0.06

Note:

"Current" refers to existing conditions. "With" refers to proposed conditions (post-construction).

E2EM = Estuarine Intertidal Emergent; E2FO = Estuarine Intertidal Forested; E2SS = Estuarine Intertidal Scrub-Shrub; FL = Functional Loss; R1UBx = Riverine Tidal Unconsolidated Bottom Excavated; UMAM = Uniform Mitigation Assessment Method

Table 3-15. UMAM Analysis for Alternative C

Wetland	Impact Acres	Location and Landscape Support		Water Environment		Community Structure		Total Score		Delta	FL
		Current	With	Current	With	Current	With	Current	With		
Wetland A (E2EM)	3.35	4	0	5	0	4	0	0.43	0	0.43	1.45
Wetland D (E2SS, R1UBx)	0.09	6	0	7	0	7	0	0.67	0	0.67	0.06

Note:

"Current" refers to existing conditions. "With" refers to proposed conditions (post-construction).

E2EM = Estuarine Intertidal Emergent; E2SS = Estuarine Intertidal Scrub-Shrub; FL = Functional Loss; R1UBx = Riverine Tidal Unconsolidated Bottom Excavated; UMAM = Uniform Mitigation Assessment Method

Table 3-16. UMAM Analysis for Alternative D

Water	Impact Acres	Location and Landscape Support		Water Environment		Community Structure		Total Score		Delta	FL
		Current	With	Current	With	Current	With	Current	With		
Wetland D (E2SS, R1UBx)	0.16	6	0	7	0	7	0	0.67	0	0.67	0.11
Surface Water B (R1UBx)	0.11	7	0	7	0	6	0	0.67	0	0.67	0.07

Note:

"Current" refers to existing conditions. "With" refers to proposed conditions (post-construction).

FL = Functional Loss; R1UBx = Riverine Tidal Unconsolidated Bottom Excavated; UMAM = Uniform Mitigation Assessment Method

Two types of wetland mitigation credits are available for sale at the MPMB: estuarine intertidal emergent (E2EM) and estuarine intertidal forested (E2FO). The E2FO credits also cover impacts to estuarine intertidal scrub-shrub (E2SS) and riverine tidal (R1) systems. Based on the MPMB credit ledger, there are

4.54 E2EM credits and 15.22 E2FO credits currently available for sale and a total of 17.6 E2EM credits and 57.7 E2FO credits potentially available for sale at the bank. Based on the UMAM analyses, Alternative B would require 1.1 E2EM credits and 0.15 E2FO credits, Alternative C would require 1.45 E2EM credits and 0.06 E2FO credits, and Alternative D would require 0.18 E2FO credits (Table 3-17). The prices of 1 E2EM credit and 1 E2FO credit at the MPMB are currently \$300,000 and \$400,000, respectively. Based on these credit prices, the credits required would cost \$390,000 under Alternative A, \$459,000 under Alternative C, and \$72,000 under Alternative D (Table 3-17).

Table 3-17. MPMB Credits Required under Alternatives B, C, and D

Alternative	Credit Type	Credit Quantity	Credit Price	Cost	Total Cost
B	E2EM	1.1	\$300,000	\$330,000	\$390,000
	E2FO	0.15	\$400,000	\$60,000	
C	E2EM	1.45	\$300,000	\$435,000	\$459,000
	E2FO	0.06	\$400,000	\$24,000	
D	E2FO	0.18	\$400,000	\$72,000	\$72,000

E2EM = Estuarine Intertidal Emergent; E2FO = Estuarine Intertidal Forested

Stormwater Management

Each alternative would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. The site drainage system would be required to meet all ERP design criteria for stormwater conveyance and discharge based on the impervious area that would be created and stormwater features proposed. Under Alternative A, removal of the existing firing line infrastructure of the North Range and the concrete walls and bullet trap system of the South Range would decrease impervious area. For the North Range, a swale would be created near the footprint of the former firing line to facilitate range drainage, and the interior of the range would be graded to drain into the swale and sodded. For the South Range, the existing swale along the southern side of the range would be regraded, and the interior of the range would be graded to drain into the swale and sodded.

Implementation of Alternative B or C would also result in a net reduction in impervious area because more impervious infrastructure would be removed than added under these alternatives. Under Alternative B or C, swales would be created as needed to facilitate drainage within the proposed new outdoor ranges. The interior of the ranges would be graded to drain into the swales and would be sodded. Alternative D would result in a net increase in impervious area. Based on preliminary planning, the new indoor range under Alternative D would be 77,281 ft². The stormwater management system for the new indoor range would be designed to meet all ERP design criteria for stormwater conveyance and discharge based on the impervious area of the range and any associated impervious infrastructure.

All the alternatives would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Protection of nearby wetlands and other surface waters from erosion and sedimentation impacts would be especially important given the proximity of these wetlands/waters to the CATM Complex. Potential BMPs and engineering controls for each alternative include, but are not limited to, installing silt fence along the perimeter and downstream portions of the construction area to trap sediment in stormwater runoff; installing silt fence around construction laydown areas and ensuring that staged equipment and materials are properly stored and handled to prevent any indirect impacts to soils and water resources; protecting the onsite wetlands with a double row of silt fence; controlling potential concentrated flows with diversion berms that would divert drainage into spreader swales and check dams to reduce flow velocity and dissipate flow volumes; stabilizing exposed soils in the construction area by seeding or mulching; using erosion control blankets or matting on steep slopes to prevent erosion; preventing release of construction

materials that could contaminate the onsite wetlands such as petroleum, oil, and lubricants (POL) onto exposed soils; and ensuring that all construction workers are aware of the location of the onsite wetlands and the associated protection measures required to be implemented. The final suite of measures that would be implemented by the DAF would be based on site conditions and the specific requirements identified in the ERP and final SWPPP.

3.2.3.1.2 Floodplains

The footprints of all the alternatives are located in the floodplain, as is most of the landmass of MacDill AFB. As discussed, Alternatives A, B, and C would not add additional impervious area and, therefore, would not displace floodplain. Alternative D would result in a net increase in impervious area and, therefore, would displace floodplain. Based on preliminary planning, Alternative D is expected to displace less than 0.5 acre of floodplain. There are no practicable alternatives to reconstructing the CATM Complex in the floodplain because the entire area that is designated for small arms training at MacDill AFB is in the floodplain.

Any new infrastructure under each alternative would be designed and elevated to minimize being impacted by flooding, which regularly occurs at and around the CATM Complex. No new facilities that would be occupied by personnel are proposed under Alternatives A, B, or C. The indoor range under Alternative D would be occupied and, therefore, would be elevated above the floodplain (lowest floor) to minimize operational impacts from flood events.

3.2.3.1.3 Groundwater

Construction under each alternative would not involve withdrawals from groundwater. Groundwater within the surficial aquifer may be encountered during certain types of construction activities such as excavation under each alternative. Any dewatering necessary during such construction activities would be conducted using standard methods and would have no effect on groundwater quality or flow. Hazardous materials used and hazardous waste generated during construction would be managed in accordance with all applicable environmental compliance regulations and MacDill AFB environmental management plans, thereby minimizing the potential for releases into groundwater.

3.2.3.1.4 Conclusion

Based on the lack of wetland impacts under Alternative A, the compensatory wetland mitigation that would be provided for Alternatives B, C, and D, and the measures that would be implemented to prevent indirect erosion, sedimentation, and pollution impacts to wetlands and other surface waters during construction, all the action alternatives would have a less-than-significant impact on wetlands and surface water. All the alternatives are located in the floodplain, but only Alternative D is expected to increase impervious area and displace floodplain; the amount of floodplain that would be displaced is expected to be less than 0.5 acre and would not be significant. None of the alternatives would have an appreciable effect on groundwater. For these reasons, all the alternatives would have a less-than-significant impact on water resources.

3.2.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on water resources resulting from the reconstruction of the CATM Complex as proposed.

3.3 Geological Resources

3.3.1 Regulatory Setting

Geological resources in this EA refer to soils and subsurface lithology, as well as site topography. Under all the alternatives, reconstruction of the CATM Complex would be conducted using standard methods that would not adversely affect subsurface lithology, including geological formations and mineral resources.

Operation of the reconstructed CATM Complex would have no effect on geological formations or mineral resources. Therefore, these resources are not analyzed further in this EA.

The management of soils as a natural resource on DoD property is addressed in regulations applicable to Integrated Natural Resources Management Plans (INRMPs), which primarily include the Sikes Act, as amended, and AFMAN 32-7003, *Environmental Conservation*, which provides guidance and procedures for DAF cultural and natural resources programs. AFMAN 32-7003 addresses soil erosion control and minimization of soil disturbance during mission activities, land management practices, and recreational activities. AFMAN 32-7003 also addresses mineral leasing on DAF property.

Prime farmland is protected under the Farmland Protection Policy Act and is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is available for these uses. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. There are no prime or unique farmland soils on MacDill AFB (DAF 2022).

3.3.2 Affected Environment

Soil consists of varying amounts of mineral particles and organic matter. It serves as a medium for plant growth and water storage and as habitat for certain types of organisms. Soils are formed by numerous physical, chemical, and biological processes, which include weathering of parent material, accumulation of organic matter, and biochemical leaching or reduction of minerals. Soil erosion is the process by which soil is removed from a given location by wind or water flow and then transported to other locations.

There are two soil types mapped by the NRCS within the area encompassed by the CATM Complex: *Malabar fine sand, 0 to 2 percent slopes*, which covers the developed portion of the CATM Complex including the ranges, and *Wabasso-Urban land complex*, which covers the eastern two thirds of the field between the ranges and Marina Bay Drive (NRCS 2024). There are no prime or unique farmland soils on MacDill AFB (DAF 2022).

Table 3-18 presents information on the NRCS-mapped soil types within the footprints of the alternatives. The footprint of Alternative A is mapped entirely as *Malabar fine sand, 0 to 2 percent slopes*. The footprints of Alternatives B, C, and D are mapped as *Malabar fine sand, 0 to 2 percent slopes* in their western portions and as *Wabasso-Urban land complex* in their eastern portions. *Malabar fine sand, 0 to 2 percent slopes* is a nearly level, poorly drained soil that consists of Malabar soil (85 percent), which is the major component, and Valkaria, Pineda, Oldsmar, and Basinger soils, which are the minor components (Table 3-18). All the soil components of this map unit are hydric except for Oldsmar soil. *Wabasso-Urban land complex* is a nearly level, poorly drained soil that consists of Wabasso soil (50 percent) and Urban land (35 percent), which are the major components, and Malabar, Myakka, and Felda soils, which are the minor components. Of these soil components, only Malabar and Felda soils are hydric.

Table 3-18. Mapped Soil Types within Footprints of Alternatives

Alternative	NRCS Map Unit	Estimated Percentage of Footprint
A	Malabar fine sand, 0 to 2 percent slopes	100%
B	Malabar fine sand, 0 to 2 percent slopes	67%
	Wabasso-Urban land complex	33%
C	Malabar fine sand, 0 to 2 percent slopes	59%
	Wabasso-Urban land complex	41%
D	Malabar fine sand, 0 to 2 percent slopes	67%
	Wabasso-Urban land complex	23%

Source: NRCS 2024

In general, the topography of MacDill AFB is relatively flat, with ground elevations ranging from sea level along the southern boundary of the base to approximately 15 feet amsl along the northern boundary of the base (DAF 2022). Based on topographic data from the Alternative A design, ground elevations throughout much of the CATM Complex range from 4 to 6 feet National Geodetic Vertical Datum of 1929 (NGVD 29). Elevations in the estuarine wetlands adjacent to the CATM Complex range from 2 to 4 feet NGVD 29. The berms of the North and South Ranges are the highest features at the site. The height of the impact berm of the North Range varies from 17 to 18 feet NGVD 29. The height of the impact berm of the South Range varies from 12 to 16 feet NGVD 29. The heights of the side berms of the North Range vary from 10 to 12 feet NGVD 29. The southern side berm of the North Range serves as the northern side berm of the South Range. The southern side berm of the South Range is smaller, and its height is 8 feet NGVD 29.

3.3.3 Environmental Consequences

3.3.3.1 Action Alternatives

Soils within the footprints of each alternative have the potential to be physically disturbed by site clearing/grubbing, excavation, filling, grading, and paving. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development including construction of the CATM Complex, the former adjacent submachine gun range, and the extensive network of drainage ditches in the area. There are no prime or unique farmland soils on MacDill AFB.

The amount of earthwork would vary considerably among the action alternatives, particularly the amount of berm creation and removal that would be conducted. Alternative A would involve the least earthwork among the alternatives. Under Alternative A, the existing berms of the North and South Ranges would be cleared and grubbed of trees and shrubs, and the South Range berms would be reshaped and/or built up as needed for the new NCI range. Excess berm soil from the portions of the berms that are higher than needed may be used as fill for building up portions of the berms that are lower than needed. New fill from outside MacDill AFB may be needed for berm work under Alternative A; however, the amount of new fill that may be needed has yet to be determined in the design.

Alternatives B, C, and D would require much more earthwork than Alternative A because they would involve the creation of new berms and the removal of existing berms. The fill volumes for berm creation and berm removal under these alternatives were estimated from Digital Elevation Model data for this EA and are presented in Table 3-19.

Table 3-19. Estimated Fill Volumes for Berm Creation and Removal under Alternatives B, C, and D

Alternative	New Berm Creation	Existing Berm Removal
B	112,846 cubic feet	41,497 cubic feet
C	65,005 cubic feet	Not applicable
D	Not applicable	209,189 cubic feet

Under Alternative B, the existing northern side berm and impact berm of the North Range would be used for the new NCI range. The northern side berm would be extended to the firing line, and the impact berm would be extended to the south as needed (Figure 2-3). A new southern side berm would be constructed for the range from the impact berm to the firing line. The creation of new berms under Alternative B is estimated to require a total of 112,846 cubic feet of fill, and the removal of existing berms under Alternative B is estimated to include a total of 41,497 cubic feet of fill. New fill required under Alternative B and all the other alternatives would be obtained from a borrow source outside MacDill AFB. Fill that is removed from the site under all the alternatives would be properly disposed of outside the base.

Under Alternative C, the existing northern side berm and impact berm of the North Range would be used for the new 21-lane NCI range. The northern side berm would be extended to the firing line, and a new impact berm and southern side berm would be constructed for the new 14-lane NCI range (Figure 2-4). There would be no side berm between the two new ranges. The creation of new berms under Alternative C

is estimated to require a total of 65,005 cubic feet of fill. Alternative C would not involve the removal of existing berms.

Under Alternative D, the existing berms of the CATM Complex would be removed as part of the MMRP cleanup and closure process of the North and South Ranges. The total volume of these berms is estimated to be 209,189 cubic feet.

Alternative A would have no appreciable effect on site topography. The site topography would be affected by Alternatives B and C, which would add new berms to the site, and by Alternative D, which would remove the existing berms at the site. No new facilities that would be occupied by personnel are proposed under Alternative A, B, or C. The indoor range under Alternative D would be occupied and, therefore, would be elevated above the floodplain (lowest floor) to minimize operational impacts from flood events. Elevating the new indoor range to the required height would require the addition of fill material, which would alter the topography in the construction area.

The potential for soil erosion and sedimentation impacts during construction under all the alternatives would be minimized by installing silt fence along the perimeter and downstream portions of the construction area to trap sediment in stormwater runoff; stabilizing exposed soils in the construction area by seeding or mulching; and using erosion control blankets and matting on steep slopes to prevent erosion. Other specific measures to control soil erosion and sedimentation during construction may be specified in the regulatory permits that would be obtained for the project. Measures to prevent soil erosion and sedimentation impacts in areas susceptible to being impacted, such as steeply sloped areas and areas near wetlands, are further discussed in Section 3.2. The management of fugitive dust that would be generated during construction under the alternatives is addressed in Section 3.1. The potential effects of small arms ammunition on soils under the alternatives are discussed in Section 3.9.

In conclusion, reconstruction of the CATM Complex under all the action alternatives would have a less-than-significant impact on geological resources.

3.3.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on geological resources resulting from the reconstruction of the CATM Complex as proposed.

3.4 Cultural Resources

3.4.1 Regulatory Setting

Cultural resources include historic architectural properties (buildings, structures, districts, and objects), prehistoric and historic archaeological sites, and Traditional Cultural Properties. The NHPA sets forth government policy and procedures regarding historic properties. *Historic property* is defined under 36 CFR 800.16 (l)(1) as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior.” Section 106 of the NHPA requires federal agencies to consider the effects of their actions on such properties, following regulations issued by the Advisory Council on Historic Preservation (ACHP) (36 CFR 800). The ACHP promotes the preservation, enhancement, and productive use of historic resources, and advises the president and Congress on national historic preservation policy. The NHPA also authorizes each governor to appoint a SHPO to carry out the functions defined in the NHPA, and to administer the State Historic Preservation Office Program. SHPOs provide advice and assistance to federal agencies regarding their cultural resources management programs and historic preservation responsibilities.

The Archaeological Resources Protection Act governs the excavation of archaeological sites on federal and Native American tribal lands in the U.S., and the removal and disposition of archaeological collections from those sites. The Archeological and Historic Preservation Act provides for the preservation of historical and archaeological objects and materials that might be lost or destroyed due to federally authorized

construction activity. The Archeological and Historic Preservation Act also allows for any federal agency responsible for a construction project to appropriate a portion of project funds for archaeological survey, recovery, analysis, and publication of results. AFMAN 32-7003, *Environmental Conservation*, provides guidance and procedures for cultural resources programs at DAF installations.

Consistent with NHPA implementing regulations (36 CFR 800), DoDI 4710.02, *DoD Interactions with Federally Recognized Tribes*, DAFI 90-2002, *Interactions with Federally Recognized Tribes*, and AFMAN 32-7003, *Environmental Conservation*, the DAF consults with federally recognized tribes that are historically affiliated with the geographic region being considered for DAF proposed actions regarding the potential to affect properties of cultural, historical, or religious significance to the tribes. The tribal coordination process is distinct from NEPA consultation or the intergovernmental coordination processes and requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations.

3.4.2 Affected Environment

The MacDill AFB Integrated Cultural Resources Management Plan provides guidance on the management of cultural resources on MacDill AFB, and the integration of cultural resources management with mission activities and other base management programs (DAF 2022). Archaeological surveys have been conducted for 5,689 acres of the total 5,695 acres encompassed by MacDill AFB. A total of 50 archaeological sites have been identified on MacDill AFB, with 6 sites being listed or eligible for listing in the NRHP and the remaining 44 sites determined to be ineligible for NRHP listing. A total of 28 real property facilities on MacDill AFB are listed or eligible for listing in the NRHP. There are two historic districts at MacDill AFB, within which 48 buildings are eligible for NRHP listing; 10 of these buildings have been determined also to be eligible individually. Four federally recognized Native American tribes have a historic affiliation with the area encompassed by MacDill AFB and its vicinity; these tribes are the Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Seminole Tribe of Florida, and Seminole Nation of Oklahoma.

The area that encompasses Alternatives A, B, C, and D was surveyed during Phase I archaeological surveys conducted in 2017 and 2019. Based on these surveys, there are no known archaeological sites within or adjacent to the footprint of any alternative. The nearest known three archaeological sites are located approximately 200 to 900 feet from the CATM Complex. The exact locations of these and other archaeological sites at MacDill AFB are purposefully not identified in this EA as required by MacDill AFB to protect the sites from trespass, vandalism, or other harm in accordance with Section 9 of the Archaeological Resources Protection Act and Section 304 of the NHPA. All these sites have been determined to be ineligible for listing in the NRHP. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of MacDill AFB's two historic districts.

3.4.3 Environmental Consequences

3.4.3.1 Action Alternatives

MacDill AFB is consulting with the SHPO and four affiliated Native American tribes in accordance with Section 106 of the NHPA on the alternatives being analyzed in this EA. As discussed, there are no known archaeological sites within or adjacent to the footprint of any alternative. Based on the locations of the nearest known archaeological sites, there would be no potential for any of them to be impacted by the reconstruction of the CATM Complex under any of the alternatives. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of the two historic districts on the base. Therefore, no impacts to architectural resources are expected to result from reconstruction of the CATM Complex under any of the alternatives.

If artifacts, concentrations of shell, or unique soil conditions were discovered during construction, all construction activity in the vicinity of the discovery would cease until the MacDill AFB Cultural Resources Manager assessed the situation in consultation with the SHPO. In the event that the inadvertent find was human remains, all work in the immediate vicinity of the discovery would be halted, and the remains

would be protected until the resources were identified and evaluated and an appropriate mitigation strategy was developed in consultation with the SHPO and tribal representatives as appropriate, relevant to Chapter 872, *Florida Statutes*, and the Native American Graves Protection and Repatriation Act (25 USC Sections 3001–3013).

Consultation letters for the Proposed Action were sent to SHPO on February 16, 2024, and to the four affiliated Native American tribes on April 15, 2024. In a letter dated February 29, 2024 (Appendix A), SHPO replied that based on the information provided and the conditions outlined concerning fortuitous finds or unexpected archaeological discoveries, it finds that “no historic properties will be affected by the proposed undertakings.”

Native American Tribe comments received will be discussed here.

Provided that the identified measures are implemented to protect any inadvertent finds of cultural materials during construction, reconstruction of the CATM Complex under all the action alternatives would have no effect on cultural resources.

3.4.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on cultural resources resulting from the reconstruction of the CATM Complex as proposed.

3.5 Biological Resources

3.5.1 Regulatory Setting

Biological resources in this EA refer primarily to plants and animals, with focus given to species that are federally listed as Endangered or Threatened, which are afforded legal protection under the Endangered Species Act (ESA). The ESA requires federal agencies to ensure that actions that they authorize, fund, or carry out will not likely jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat of such species. Critical habitat is defined by the ESA as specific areas within or outside the geographical area occupied by a listed species that contain physical or biological features essential to the species’ conservation and that may require special management considerations or protection. The ESA also requires that federal agencies implement measures to conserve, protect, and, where possible, enhance any listed species and its habitat. The ESA is administered by USFWS and the National Marine Fisheries Service. Generally, USFWS manages land and freshwater species, and the National Marine Fisheries Service manages marine and anadromous species, which are species that breed in freshwater but live most of their lives in the sea.

Animal species in Florida may also be awarded state listing and associated regulatory protection in accordance with Chapter 68A-27, FAC. The Florida Fish and Wildlife Conservation Commission (FWC) maintains the state’s list of such animal species. Animal species that are not federally listed but are determined to be at risk of extinction in the state are state listed as Threatened. Plant species in Florida may also be awarded state listing and associated regulatory protection in accordance with Chapter 5B-40, FAC. The Florida Department of Agriculture and Consumer Services maintains the state’s list of such plant species. In accordance with AFMAN 32-7003, *Environmental Conservation*, the DAF will protect state-listed species when practical and not in conflict with the mission. Some species that are not ESA listed are afforded federal protection under the Marine Mammal Protection Act, Bald and Golden Eagle Protection Act, or Migratory Bird Treaty Act (MBTA).

Migratory birds are protected under the MBTA and EO 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds.” The MBTA makes it illegal to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products, except as allowed by the implementing regulations. EO 13186 requires that federal agencies avoid or minimize the impacts of their activities on migratory birds and make efforts to protect birds and their habitat.

3.5.2 Affected Environment

The primary vegetative communities on MacDill AFB include mangrove forests, tidal shrub salt marsh, pine flatwoods, and oak-dominated forests (DAF 2022). Approximately 62 percent of the base consists of urban and barren land that contains little to no natural vegetation (DAF 2022).

The interiors of both the North Range and South Range consist of mowed turfgrass. The area east of the ranges between the firing lines and parking lot consists of mowed turfgrass, live oak (*Quercus virginiana*), Australian pine (*Casuarina equisetifolia*), and landscaped vegetation. Approximately 25 trees have grown on the impact berms and side berms of both ranges and primarily include live oak, Brazilian pepper tree, and cabbage palm.

Much of the land that surrounds the berms of the CATM Complex consists of estuarine intertidal wetlands and tidal drainage ditches. These estuarine wetlands are either forested wetlands dominated by mature red, black, and white mangroves or scrub-shrub wetlands dominated by saltbush, Brazilian pepper tree, and sparser cover of young black and white mangroves. The field that extends from the CATM Complex parking lot to Marina Bay Drive is also an estuarine intertidal wetland and is dominated by salt-tolerant herbaceous plant species, including salt grass, saltwort, sea oxeye, and sea purslane. The vegetation within these wetlands and other surface waters around the CATM Complex is described in greater detail in Section 3.2. Natural upland communities around the CATM Complex occur primarily west and northwest of the North Range impact berm and within the footprint of Alternative D. These communities are dominated by live oak, cabbage palm, Brazilian pepper tree, and slash pine (*Pinus elliottii*).

Much of MacDill AFB is developed and suited primarily for common wildlife species adapted to urban settings. Wildlife habitat abundance and quality at MacDill AFB is highest in the southwestern part of the base, which is largely undeveloped and contains high-quality pine forests and wetlands. MacDill AFB's location on a peninsula that is bordered by urban land limits migration of terrestrial species into the base. Suppression of beneficial wildfire, recruitment of exotic plant species, and hydrological impacts from drainage ditches/canals are factors that reduce the overall quality of wildlife habitat on the base. The CATM Complex is largely developed and provides poor-quality habitat for wildlife. Small arms training on the CATM ranges is a regular source of noise and potential disturbance to wildlife in the surrounding area. Much of the land beyond the berms of ranges is undeveloped and provides relatively good-quality habitat, particularly for species that occur in estuarine intertidal habitats. Wildlife species sighted during the field surveys conducted for this EA included the nine-banded armadillo (*Dasypus novemcinctus*), marsh rabbit (*Sylvilagus palustris*), boat-tailed grackle (*Quiscalus major*), American crow (*Corvus brachyrhynchos*), and mudflat fiddler crab (*Uca rapax*). Range personnel indicate that fiddler crabs occur throughout the field east of the CATM Complex (Wetland A) during the summer wet season. Lastly, there is an osprey nest located on a light pole within the interior of the North Range. This nest has been occupied in during past nesting seasons by ospreys, which usually first arrive to the nest during Spring. Range personnel have reported that no ospreys have occupied the nest so far in 2024, as of April. No ospreys were sighted using the nest during field surveys conducted for this EA in February, March, and April 2024.

The federally protected species identified in the MacDill AFB INRMP (DAF 2022) as potentially occurring at the base are presented in Table 3-20. Of the species identified, only the green sea turtle (*Chelonia mydas*), bald eagle (*Haliaeetus leucocephalus*), piping plover (*Charadrius melodus*), rufa red knot (*Calidris canutus rufa*), wood stork (*Mycteria americana*), tricolored bat (*Perimyotis subflavus*), and Florida manatee (*Trichechus manatus latirostris*) have been documented to actually occur on the base based on past protected species surveys (DAF 2022). No portion of MacDill AFB, or the surrounding marine system, has been designated as critical habitat.

Table 3-20. Federally Protected Species Potentially Occurring at MacDill AFB

Animal Class	Common Name	Scientific Name	Federal Legal Status
Insects	Monarch butterfly	<i>Danaus plexippus</i>	Candidate
Fish	Giant manta ray	<i>Manta birostris</i>	Threatened
	Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened
	Smalltooth sawfish	<i>Pristis pectinata</i>	Endangered
Reptiles	American crocodile	<i>Crocodylus acutus</i>	Threatened
	Eastern indigo snake	<i>Drymarchon couperi</i>	Threatened
	Green sea turtle ^[a]	<i>Chelonia mydas</i>	Threatened
	Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
	Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
	Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
	Loggerhead sea turtle ^[b]	<i>Caretta caretta</i>	Threatened
Birds	Audubon's crested caracara	<i>Polyborus plancus audubonii</i>	Threatened
	Bald eagle	<i>Haliaeetus leucocephalus</i>	Bald and Golden Eagle Protection Act
	Eastern black rail	<i>Laterallus jamaicensis jamaicensis</i>	Threatened
	Florida scrub-jay	<i>Aphelocoma coerulescens</i>	Threatened
	Piping plover	<i>Charadrius melodus</i>	Threatened
	Red-cockaded woodpecker	<i>Dryobates borealis</i>	Endangered
	Rufa red knot	<i>Calidris canutus rufa</i>	Threatened
	Wood stork	<i>Mycteria americana</i>	Threatened
Mammals	Florida bonneted bat	<i>Eumops floridanus</i>	Endangered
	Tricolored bat	<i>Perimyotis subflavus</i>	Proposed Endangered
	West Indian (Florida) manatee	<i>Trichechus manatus</i>	Threatened, Marine Mammal Protection Act

^[a] North Atlantic Distinct Population Segment^[b] Northwest Atlantic Distinct Population Segment

Source: DAF 2022

Candidate: species for which federal listing agencies have sufficient information on biological vulnerability and threats to support proposing to list the species as Endangered or Threatened

Endangered: species in danger of extinction throughout all or a significant portion of its range

Proposed Endangered: species proposed for listing as endangered

Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range

Potential occurrence of protected species within and near the CATM Complex was initially evaluated by reviewing the MacDill GIS protected species database, INRMP (DAF 2022), and results of past protected

species surveys. Field surveys that evaluated protected species occurrence and habitat within and near the footprints of the alternatives were conducted in February 2024 for this EA. The USFWS liaison to MacDill AFB was also consulted to identify which species could potentially be affected by the Proposed Action. Following this initial consultation, an official species list and project code were generated for the project through the USFWS Information for Planning and Conservation process. Based on the information reviewed, findings of surveys conducted for this EA, and initial consultations for the project, the following species are determined to potentially occur near enough to the CATM Complex to be potentially affected by the Proposed Action: eastern black rail (*Laterallus jamaicensis jamaicensis*), rufa red knot, wood stork, and tricolored bat.

The MBTA currently protects a total of 1,106 bird species (USFWS 2023). The area that encompasses the Proposed Action lies within the Atlantic Flyway, which is a major north-south air corridor used by migratory birds. The Atlantic Flyway extends from Greenland down the Atlantic coasts of Canada and the U.S. to the Caribbean and South America. Numerous bird species known to occur at MacDill AFB are protected under the MBTA. The USFWS official species list for the project identifies when certain bird species protected under the MBTA are most likely to be present and breeding in the project area.

3.5.3 Environmental Consequences

3.5.3.1 Action Alternatives

3.5.3.1.1 Vegetation and Wildlife

The types and quantities of vegetation that would be impacted under each action alternative are presented in Table 3-21. The wetland vegetation that would be impacted under the alternatives is discussed in detail in Section 3.2.

Table 3-21. Estimated Impacts to Vegetation under the Alternatives

Alternative	Vegetation Type	Impact Quantity	Impact Type
A	Upland forest	0.05 acre	Fence construction
	Mowed turfgrass	0.6 acre	Fence and range construction
	Trees on berms	Approximately 25 trees	Tree removal
B	Estuarine emergent wetland (wet field)	2.53 acres	Range interior fill, berm construction, and firing line construction
	Estuarine forested wetland	0.12 acre	Berm construction
	Estuarine shrub wetland	0.11 acre	Range interior fill and berm construction
	Upland forest	0.03 acre	Berm construction
	Mowed turfgrass	1.16 acres	Berm construction
	Trees on berms	Approximately 25 trees	Tree removal
C	Estuarine emergent wetland (wet field)	3.35 acres	Range interior fill, berm construction, and firing line construction
	Estuarine shrub wetland	0.11 acre	Range interior fill and berm construction
	Upland forest	0.03 acre	Berm construction
	Mowed turfgrass	1.14 acre	Berm construction
	Trees on berms	Approximately 25 trees	Tree removal
D	Estuarine shrub wetland	0.16 acre	Range construction
	Forested tidal drainage ditch	0.11 acre	Range construction
	Upland forest	1.47 acres	Range construction
	Mowed turfgrass	2.12 acres	Range demolition
	Trees on berms	Approximately 25 trees	Tree removal

As indicated in Table 3-21, Alternative A would impact a relatively small quantity of upland forest (0.05 acre) for the construction of the proposed new perimeter fence. Approximately 0.6 acre of mowed turfgrass within the South Range would be impacted by the construction of the new range, and the affected areas would be resodded. The estimated 25 trees growing on the existing berms of the North and South Ranges would be removed under Alternative A as well as under the other alternatives. The trees on the berms primarily include live oak, Brazilian pepper tree, and cabbage palm. Of the alternatives, Alternative A would have the least impact on vegetation and potential wildlife habitat. The upland forest that would be impacted is disturbed and adjacent to the berms and firing lines of the ranges. The trees growing on the berms also provide relatively poor-quality habitat for wildlife.

Alternatives B and C would impact estuarine wetlands, upland forest, and mowed turfgrass. Most of the wetland impact under each alternative would be to the wet field east of the CATM Complex. As discussed in Section 3.2, this field functions as a high salt marsh and is dominated by estuarine herbaceous plant species. The field is regularly mowed when not inundated. Alternatives B and C would each impact small quantities of estuarine forested and shrub wetlands. Compensatory wetland mitigation would be provided for the wetland impacts, and measures to prevent erosion and sedimentation would be implemented during construction (Section 3.2). The wet field, which would incur most of the wetland impact under each alternative, is disturbed and provides relatively low-quality wildlife habitat. The small amounts of higher-

quality forested and shrub estuarine wetlands that would be impacted would not adversely impact the overall quality and functionality of those wetlands. Impacts to upland forest, the trees growing on the berms, and turfgrass under Alternatives B and C would be comparable to those described for Alternative A.

The new indoor range proposed under Alternative D would impact estuarine shrub wetland (0.16 acre), forested tidal drainage ditch (0.14 acre), and upland forest (1.47 acres). Closure of the CATM Complex under Alternative D would involve removal of the existing berms and impacts to the turfgrass within the ranges and adjacent grounds. The estuarine wetlands that would be impacted by Alternative D provide moderate-quality habitat for wildlife. The remaining portions of these wetlands/water would retain their quality and functionality, and compensatory mitigation would be provided for the unavoidable impacts (Section 3.2).

Based on the type, quantity, and quality of the vegetation and habitat that would be impacted and the compensatory mitigation that would be provided under the alternatives that would incur wetland impacts, all the alternatives would have a less-than-significant impact on vegetation and wildlife habitat. The overall potential for unintentional physical impacts to wildlife, including impacts to bird nests or eggs, from construction activities would be relatively low under all the alternatives based on the types and amounts of undeveloped land that would be disturbed. Any bird nests found during construction would be avoided to the extent practicable. In the event that a bird nest was found within or adjacent to the construction site, the construction contractor would be required to immediately stop work and consult with the MacDill Natural Resources Office on the protection of the nest before resuming construction activities.

As discussed, there is an osprey nest located on a light pole within the interior of the North Range. This nest has been used by ospreys in the past, with nesting pairs typically first arriving to the nest in spring; however, the nest has not been occupied in 2024, as of April. Osprey nests, eggs, and young are protected under the MBTA and Rule 68A-16.001, FAC. A permit may be required to remove an active nest—that is, a nest that contains eggs or flightless young—but a permit is not required to remove an inactive nest. The nest within the North Range would be removed under all the alternatives. The nest would be removed by the MacDill Natural Resources Office in coordination with FWC only when it is inactive.

The noise generated during construction activities may temporarily disturb wildlife that occur near the site; however, any disturbance would be limited to the construction period and is expected to be negligible. Small arms training at the CATM Complex is a regular source of noise and potential disturbance to wildlife in the surrounding area. Reconstruction of the CATM Complex under any of the alternatives would not change the type or amount of small arms training conducted. Based on noise modeling (Section 3.6), operation of the new outdoor ranges proposed under Alternatives A, B, and C would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on the strictly enforced range safety measures and the heights of the berms, there would be virtually no potential for any bullet fired on the outdoor range to overshoot the impact berm or side berms and potentially harm wildlife under Alternative A, B, or C. Under Alternative D, all fired bullets would be contained within the proposed new indoor range.

3.5.3.1.2 Protected Species

Based on the information reviewed, findings of surveys conducted for this EA, initial consultations with USFWS, and the official species list generated for the project, the following federally protected species are determined to have the potential to be affected by the Proposed Action: eastern black rail, rufa red knot, wood stork, and tricolored bat. The DAF's effect determinations for these species for Alternative A, the preferred alternative, were included in the consultation letter sent to USFWS for the Proposed Action, dated February 16, 2024 (Appendix A). This section discusses these effect determinations and the potential impacts of the other alternatives on protected species.

As discussed, small arms training at the CATM Complex is a regular source of noise and potential disturbance to wildlife. This regular noise and activity are expected to reduce the potential for protected species to use the habitat in the immediate vicinity of the CATM Complex. Construction noise under all the

alternatives would be temporary and reconstruction of the CATM Complex under any of the alternatives would not change the type or amount of small arms training conducted and, therefore, would not increase the levels of firearm noise in the area relative to existing conditions. There would be virtually no potential for any bullet fired on the range to overshoot the impact berm or side berms and potentially harm protected species under Alternative A, B, or C. Under Alternative D, all fired bullets would be contained within the indoor range.

Portions of the estuarine intertidal wetlands north, west, and south of the CATM Complex are potentially suitable habitat for the wood stork, eastern black rail, and rufa red knot. MacDill AFB is within core foraging areas for off-base wood stork colonies, and wood storks regularly occur around wetlands and water bodies on the base. The eastern black rail has not been sighted on MacDill AFB. Call-playback surveys for the species were conducted in suitable habitat at the base in March 2021 and May 2022 (DAF 2022). The rufa red knot is known to occur on MacDill AFB during winter. The nearest areas where individuals or groups of red knots have been sighted are approximately 1,890 feet to the south and 2,100 feet to the southeast of the CATM Complex. Alternative A would have no direct impact on wetlands or other surface waters and, therefore, would not result in loss or degradation of wood stork, eastern black rail, or red knot habitat. Implementation of Alternative B, C, or D would result in direct impacts to estuarine wetlands potentially serving as habitat for one or more of these bird species. Based on the type, quantity, and quality of the wetlands that would be impacted, these alternatives are not expected to adversely impact any of these species. Most of the wetland impact under Alternatives B and C would be to the wet field that is regularly mowed, and the impacts under Alternative D would not adversely affect the overall quality, functionality, or habitat value of the remaining portions of the impacted wetland.

Engineering controls and BMPs would be implemented during construction under all the alternatives to prevent any indirect erosion, sedimentation, and pollution impacts to wetlands and other surface waters. Potential engineering controls and BMPs include, but are not limited to, installing silt fence along the perimeter and downstream portions of the construction area to trap sediment in stormwater runoff; protecting the nearest wetlands with a double row of silt fence; controlling potential concentrated flows with diversion berms that would divert drainage into spreader swales and check dams to reduce flow velocity and dissipate flow volumes; stabilizing exposed soils in the construction area by seeding or mulching; using erosion control blankets or matting on steep slopes to prevent erosion; preventing release of construction materials that could contaminate nearby wetlands onto exposed soils; and ensuring that all construction workers are aware of the location of the nearest wetlands and the associated protection measures required to be implemented. The final suite of measures that would be implemented by the DAF would be based on site conditions and the specific requirements identified in the ERP and SWPPP for the project (Section 3.2).

The tricolored bat has been documented on MacDill AFB and is proposed to be listed as endangered under the ESA. Outside winter, tricolored bats often occur in forested habitats where they roost among the leaves, Spanish moss, palm fronds, and pine needles of live and recently dead trees. Removal of trees, particularly dense forest habitat, should be avoided outside winter, especially during the maternity season from May through July when pups are unable to move and should not be disturbed. Under Alternative A, reconstruction of the CATM Complex would not involve the clearing of forest habitat; however, approximately 25 trees that have grown on the berms of the ranges would be removed. To minimize potential impacts to the tricolored bat, no trees on the berms would be removed from May through July under Alternative A. Alternatives B and C each would impact approximately 0.03 acre of upland forest, and Alternative D would impact 1.47 acres of upland forest. These alternatives would also include the removal of trees growing on the existing berms. As under Alternative A, there would be no clearing of trees from May through July under Alternatives B, C, and D to minimize potential impacts to the tricolored bat.

The CATM Complex provides suboptimal habitat for the eastern indigo snake (*Drymarchon couperi*) because it is developed and regularly used for small arms training. The nearest gopher tortoise (*Gopherus polyphemus*) burrows that could be used for shelter by the indigo snake are located approximately 4,130 feet to the north of the CATM Complex. No eastern indigo snakes have been observed at MacDill AFB during protected species surveys. There was an unverified sighting of an indigo snake at MacDill AFB

about 20 years ago, but it was never confirmed. As a precautionary measure, USFWS's *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013) would be implemented during construction under all the alternatives to minimize the potential for unintentional impacts to the eastern indigo snake.

The CATM Complex and adjacent areas do not provide suitable habitat for the piping plover (*Charadrius melodus*). The nearest areas where this federally listed shorebird has been documented to occur are approximately 1,890 feet to the south and 2,100 feet to the southeast of the CATM Complex. There are two active bald eagle (*Haliaeetus leucocephalus*) nests on MacDill AFB. The nearest active nest to the CATM Complex is located approximately 4,200 feet to the northwest. Construction associated with the Proposed Action would be well outside the 660-foot buffer of each eagle nest on the base, as recommended in USFWS's *National Bald Eagle Management Guidelines* (USFWS 2007).

Based on the presented information, and in compliance with Section 7(a)(2) of the ESA, the DAF has determined that reconstruction of the CATM Complex under Alternative A, the preferred alternative, may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. The DAF requested concurrence from USFWS on these effect determinations for Alternative A in a consultation letter dated February 16, 2024 (Appendix A). The DAF has determined that Alternative A would have no effect on any other federally listed species. In a letter dated April 15, 2024, USFWS concurred with the DAF's effect determinations for the wood stork, eastern black rail, rufa red knot, and tricolored bat (Appendix A). The DAF has determined that Alternatives B, C, and D also may affect but are not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat, and would have no effect on any other federally listed species. Under Section 7 of the ESA, USFWS consults on only one action/alternative; therefore, concurrence from USFWS on any of these alternatives would be sought if and when they are proposed to be implemented.

Bird species protected under the MBTA would be protected from being impacted during construction to the extent practicable under all the alternatives. Potential impacts to breeding birds and bird nests would be relatively low under all the alternatives based on the types and amounts of undeveloped land that would be disturbed. Any bird nests found during construction would be avoided to the extent practicable, and if the nest is within or adjacent to the construction site, the construction contractor would be required to immediately stop work and consult with the MacDill Natural Resources Office on the protection of the nest before resuming construction activities. To further minimize potential construction impacts on migratory birds, the USFWS official species list for the Proposed Action would be reviewed to identify when certain bird species protected under the MBTA are most likely to be present and breeding in the project area.

3.5.3.1.3 Conclusion

Based on the type, quantity, and quality of the vegetation and habitat that would be impacted, and the determination that potential impacts to protected species would not be adverse, all the alternatives would have a less-than-significant impact on biological resources.

3.5.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on biological resources resulting from the reconstruction of the CATM Complex as proposed.

3.6 Noise

3.6.1 Regulatory Setting

Noise can be simply defined as unwanted sound. The impact of noise is influenced by the characteristics of the noise, such as the sound level, frequency (pitch), occurrence (single-event, intermittent, or continuous), and duration, as well as the characteristics of the receptor (for example, a person or animal). Human response to noise varies depending on the type and characteristics of the noise, distance between

the noise source and the receptor, receptor sensitivity, and time of day. The effects of noise on humans include annoyance, sleep disturbance, and health impacts.

Sound levels are measured on a logarithmic scale in decibels (dB). Sound measurement may be further refined through the use of frequency weighting, which accounts for the sensitivity of receptors such as humans to hearing certain frequencies. Human hearing is generally within the range of 20 to 20,000 hertz and is most sensitive to sound frequencies within the range of 1,000 to 4,000 hertz. A-weighted measurements emphasize this frequency range and are expressed in terms of A-weighted decibels (dBA). In noise analyses, A-weighting is used when audible sound is the major concern, for example, to assess noise generated by subsonic aircraft, construction, or traffic. Sounds encountered in daily life and their dBA levels are presented in Table 3-22.

Table 3-22. Common Sounds and Their Levels

Outdoor	Sound Level (dBA)	Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringling telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

The duration and frequency of noise events influence the overall impact of noise on receptors. Several metrics are used in noise assessments to account for these factors. For example, the standard metric used to measure cumulative noise impacts on humans is the Day-Night Average Sound Level (DNL), which is the noise level averaged over a 24-hour day-night annual period. This metric applies a 10-dB penalty to nighttime noise occurring between 10 p.m. and 7 a.m. to account for the added intrusiveness of noise during these hours. The peak sound pressure level, expressed as decibels peak level (dBP), is the highest instantaneous sound level of a single acoustical event, and is often used to measure low-frequency impulsive noise, such as noise produced by explosions and sonic booms. Impulsive noise may be felt (overpressure or infrasound) as well as heard. Impulsive noise generally lasts less than a second and differs from intermittent noise, which is characterized as a mix of relatively quiet and noisy periods. A peak impulsive sound level of 140 dBP is the threshold for physical injury to humans in the form of temporary loss of hearing. The maximum sound level (L_{max}), often expressed in terms of dBA, is the maximum time-weighted sound level of an event. L_{max} differs from dBP, which is not time weighted.

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, and local noise control regulations. The Noise Control Act does not require on-base noise to comply with local noise ordinances, and it specifically exempts military operations, including small arms training, munitions testing, and aircraft operations. The DAF's noise program is outlined in AFI 32-1015, *Integrated Installation Planning*.

DoDI 4165.57, *Air Installations Compatible Use Zones*, includes DoD's land-use compatibility guidelines for noise exposure. In accordance with DoDI 4165.57, the DAF considers all land uses to be compatible with aircraft noise levels below 65 dBA DNL. Noise-sensitive land uses such as residences, schools, churches, and hospitals are considered conditionally compatible with higher noise levels provided that specific noise level reduction criteria are met through the design and construction of the structure.

According to DoDI 4165.57, residential land use is discouraged in areas exposed to 65 to 69 dBA DNL and strongly discouraged in areas exposed to 70 to 74 dBA DNL. Based on Department of Defense Noise Working Group guidelines, the population exposed to a DNL greater than or equal to 80 dB is at most risk to hearing loss (DNWG 2013).

DNL is the primary descriptor for military noise, except small arms noise. According to DoDI 4715.13, *DoD Operational Noise Program*, "the un-weighted peak sound pressure level noise descriptor will be used to describe military noise for small arms (i.e., .50 caliber and below) ranges." Land use compatibility guidelines for noise zones for small arms are provided in Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, which the DAF has adopted for assessments of small arms noise. Three noise zones are defined in AR 200-1 for small arms:

- Zone I: Relatively quiet noise environment. Acceptable for housing, schools, medical facilities, and other noise-sensitive land uses.
- Zone II: Moderately loud noise environment. Normally not recommended for housing, schools, medical facilities, and other noise-sensitive land uses.
- Zone III: Loud noise environment. Not recommended for housing, schools, medical facilities, and other noise-sensitive land uses.

As discussed, the peak sound level (dBP) is the highest instantaneous sound level of a single acoustical event. In the case of small arms, it is the highest instantaneous sound level produced by a given weapon at a given distance. Peak sound level for small arms weapons is strongly correlated with community annoyance (Hede and Bullen 1982). The noise limits associated with the three noise zones for small arms are presented in Table 3-23. Noise-sensitive land uses include housing, schools, and medical facilities such as hospitals and nursing homes. Noise-sensitive land uses are acceptable in Noise Zone I, which is lower than 87 dBP; normally not recommended in Noise Zone II, which is between 87 and 104 dBP; and not recommended in Noise Zone III, which is higher than 104 dBP.

Table 3-23. Noise Limits of Noise Zones for Small Arms

Noise Zone	General Noise Level	Small Arms Noise Level	Recommended Uses
I	Low	< 87 dBP	Noise-sensitive land uses acceptable
II	Moderate	87–104 dBP	Noise-sensitive land uses normally not recommended
III	High	> 104 dBP	Noise-sensitive land uses not recommended

Source: AR 200-1

3.6.2 Affected Environment

3.6.2.1 Alternative 1

The primary sources of ambient noise at the CATM Complex include small arms training at the CATM Complex; use of the skeet range and practice grenade range, located approximately 1,700 feet and 1,500 feet, respectively, north of the CATM Complex; and military aircraft overflights. Vehicular traffic on Marina Bay Drive is light and low speed, and generates low noise levels near the CATM Complex. Noise from grass mowing and other grounds maintenance activities are occasionally audible at the CATM Complex; such noise occurs infrequently, on the order of approximately once every week in summer and less frequently outside summer. Traffic and grounds maintenance activities together represent negligible sources of low-level, intermittent noise at the CATM Complex.

According to the MacDill AFB Air Installations Compatibility Use Zones (AICUZ) Study (DAF 2023a), the CATM Complex is approximately 2 miles from the 65-dB DNL noise contour associated with the MacDill AFB airfield. The CATM Complex may be exposed to intermittent noise from military aircraft overflights.

Based on the MacDill AFB AICUZ Study, the CATM Complex is located under certain arrival flight tracks but not departure flight tracks. Most aircraft that would be flying over the CATM Complex would be intending to land at the MacDill AFB airfield, descending without using afterburners, and flying at altitudes high enough (greater than 4,000 feet amsl) to not generate excessively loud noise levels at the ground surface. Such overflights produce intermittent noise that is expected to be below 65 dB on average at the CATM Complex.

Noise from the skeet range north of the CATM Complex can be audible at the CATM Complex. Skeet shooting is performed using various types of shotguns. Peak sound levels of shotguns typically range from approximately 150 to 165 dBP. When a firearm is discharged, the generated noise propagates in all directions and is loudest in front of the shooter (directly downrange) at 0 degrees, with lower noise levels occurring to the sides and rear. The CATM Complex is approximately 1,700 feet directly downrange (south) of the skeet range. At this distance and angle, noise from the skeet range would be clearly audible at the CATM Complex, with levels potentially in the range of 80 to 100 dBP, depending on prevailing weather conditions. The skeet range is used approximately 50 days per year and, therefore, is a source of relatively infrequent intermittent noise at the CATM Complex.

The practice grenade range located approximately 1,500 feet north of the CATM Complex would generate lower noise levels and activities would be conducted less frequently than skeet shooting. When fired, stand-alone grenade launchers, such as the M320 and M20, as well as under-barrel grenade launchers generate considerably lower noise levels than shotguns. Practice grenades do not explode, and the noise from a practice grenade hitting a target or the ground is considerably less than noise from a shotgun being fired. The practice grenade range is used only about 4 days per year and, therefore, is a negligible source of noise at the CATM Complex.

For this EA, the Small Arms Range Noise Assessment Model (SARNAM2) was used to predict the dBP noise contours associated with small arms training currently conducted at the CATM Complex. SARNAM2 is the primary DoD noise model used to assess small arms noise. It accounts for the spectrum and directivity of muzzle blast and projectile bow shock, which provides an accurate measure of sound propagation and attenuation. Weapon and range inputs for SARNAM2 include firearm and ammunition types, number of rounds per day, operational days per year, range length and width, firing line spacing, berm height, and baffle attributes. The modeled dBP noise contours for existing conditions at the CATM Complex are shown on Figure 3-6. The dBP noise contours are based on the peak sound level resulting from the firing of a 5.56-mm round from an M16 rifle on the North Range and a 9-mm round from an M9 pistol on the South Range. These noise contours represent the existing noise environment at the CATM Complex, and also the noise conditions under the No Action Alternative.

As shown on Figure 3-6, Noise Zone III, which is the area where peak sound levels are higher than 104 dBP, encompasses the CATM Complex, including the CATM classroom training facility, and abuts Administrative Building 612 southeast of the CATM Complex. Noise Zone II, which is the area between the 84- and 104-dBP contours, encompasses the base marinas and most of the family campground to the southeast, a portion of the golf course to the east, Administrative Buildings 1775 and 1885 to the north, and open space to the west. There are no noise-sensitive areas (NSAs) within the modeled Noise Zone II or III for existing conditions at the CATM Complex. According to AR 200-1 and DoDI 4165.57, NSAs include residences (housing), schools, and medical facilities. The administrative and outdoor recreation (campgrounds and golf course) land uses within Zone II are not considered NSAs, although a quieter noise environment is recommended for these land uses relative to operations land uses. The nearest NSA to the CATM Complex is the family housing area on MacDill AFB (Figure 3-6), located approximately 1 mile to the northeast. This NSA is within Noise Zone I, well outside the predicted 87-dBP contour for existing conditions.

Figure 3-6. Modeled dBP Noise Contours for Existing Conditions at the CATM Complex

3.6.3 Environmental Consequences

3.6.3.1 Action Alternatives

3.6.3.1.1 Construction Noise

Reconstruction of the CATM Complex under each alternative would temporarily increase ambient noise levels in and around the construction area. The increased noise levels would be intermittent and limited to daytime working hours and the overall construction period. There would be no appreciable difference among the alternatives with respect to construction noise levels or the general location of the construction noise given that all the alternative footprints overlap.

Table 3-24 identifies typical noise levels from representative construction equipment presented in the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) and *FHWA Highway Construction Noise Handbook* (FHWA 2006). As indicated, typical noise levels generated from the identified

construction equipment range from 76 dBA to 101 dBA, approximately 50 feet from the equipment source.

Table 3-24. Typical Noise Levels from Representative Construction Equipment

Construction Equipment	Typical Noise Level 50 Feet from Source (dBA)
Backhoe	80
Compactor	82
Dozer	85
Generator	82
Grader	85
Jackhammer	88
Loader	80
Paver	85
Pile driver (impact)	101
Roller	85
Saw	76
Truck	84

Sources: FTA 2018; FHWA 2006

When distance is the only factor considered (free-field conditions), noise levels are estimated to decrease by approximately 6 dBA with every doubling of distance from a noise source; the presence of obstructions such as vegetation and structures can further decrease noise levels with increasing distance (FHWA 2006).

As discussed, the nearest NSA to the CATM Complex is the base family housing area located approximately 1 mile to the northeast. Other land uses include Administrative Building 612, north marina, and family campground to the southeast, golf course to the east, and Administrative Buildings 1775 and 1885 to the north (Figure 3-6). Table 3-25 presents the estimated noise levels for these land uses during the construction period.

Table 3-25. Estimated Construction Noise Levels for Nearest Land Uses

Land Use	Distance from CATM Complex	Direction	Estimated Noise Levels
Family Housing Area	1 mile	Northeast	37 to 62 dBA
Administrative Building 612	1,000 feet	Southeast	51 to 76 dBA
North Marina	1,500 feet	Southeast	47 to 72 dBA
Family Campground	1,500 feet	Southeast	47 to 72 dBA
Golf Course	2,000 feet	East	45 to 70 dBA
Administrative Buildings 1775 and 1885	2,100 feet	North	45 to 70 dBA

Based on the noise dissipation estimated to occur over the associated distance, outdoor noise levels in the family housing area during the construction period under each alternative are estimated to range from 37 to 62 dBA, which is a noise range that is comparable to the noise perceived to be faint at the low end to noise generated by normal conversation at the high end. Noise levels inside the houses would be approximately 20 to 30 dBA lower than the outdoor noise levels. Outdoor noise levels at Administrative Building 612 are estimated to range from 51 to 76 dBA during the construction period, which is comparable to the noise from rainfall at the low end to the noise from a television at the high end. As indicated, the outdoor noise levels at the other land uses within approximately 2,000 feet of the CATM Complex, including the north marina, family campground, golf course, and Administrative Buildings 1775 and 1885, would be a little lower. Noise that is audible at these land uses would be heard only during daytime and only over the duration of the construction period. Based on the expected noise levels, reconstruction of the CATM Complex under each action alternative would not have a significant noise impact on NSAs and other land uses. Construction noise impacts would be limited to temporary disturbance and would not be significantly adverse under any of the alternatives.

3.6.3.1.2 Small Arms Noise

SARNAM2 was used to model the noise zones for Alternatives A, B, and C. Noise generated within the new fully enclosed indoor small arms range under Alternative D would have a minor contribution to outdoor levels and was not modeled. The modeled dBP noise contours for Alternatives A, B, and C are shown on Figures 3-7, 3-8, and 3-9, respectively.

The modeled dBP contours for Alternatives A, B, and C are based on peak sound level resulting from the firing of a 5.56-mm round from an M16 rifle and a 9-mm round from an M9 pistol on the respective new ranges proposed under each alternative. Modeled differences in noise propagation among the alternatives are influenced by the respective ranges' dimensions and orientation. For Alternative C, the 5.56-mm round is assumed to be fired on the 300-meter (984-foot) range and the 9-mm round is assumed to be fired on the 100-meter (328-foot) range.

The modeled dBP noise contours for Alternative A are similar to those modeled for the existing conditions at the CATM Complex (Figures 3-6 and 3-7). The small differences in the modeled contours indicate that there would be no appreciable change in small arms noise under Alternative A relative to existing conditions. Like under existing conditions, outdoor noise levels at Administrative Building 612 southeast of the CATM Complex could be at or near 104 dBP under Alternative A. Noise levels inside this building would be considerably lower than the outdoor noise levels. The modeled dBP contours for Alternatives B and C are similar to each other and differ in shape from those for existing conditions and Alternative A. The contours for Alternatives B and C also are located farther to the northeast, farther into the golf course and away from the marina and family campground. Like under existing conditions and Alternative A, the family housing area, which is the nearest NSA to the CATM Complex, would be well outside the predicted 87-dBP contours for Alternatives B and C. The impulsive small arms noise under all the alternatives would be well below the threshold level for temporary hearing loss, which is 140 dBP. Based on the SARNAM2 modeling results, small arms noise under all the alternatives would have a less-than-significant impact on NSAs, other land uses, and the public.

3.6.3.1.3 Conclusion

Based on the estimated construction noise levels and modeled small arms noise levels for each active alternative, reconstruction of the CATM Complex and operation of the reconstructed CATM Complex under each alternative would have a less-than-significant noise impact.

3.6.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no construction noise effects resulting from the reconstruction of the CATM Complex as proposed. The dBP contours modeled for existing conditions at the CATM Complex in this EA represent the existing and future noise conditions at the CATM Complex

under the No Action Alternative. Therefore, the No Action Alternative would have a less-than-significant noise impact.

Figure 3-7. Modeled dBP Noise Contours for Alternative A



Figure 3-8. Modeled dBP Noise Contours for Alternative B



Figure 3-9. Modeled dBP Noise Contours for Alternative C



3.7 Land Use

3.7.1 Regulatory Setting

Land use describes how land is developed and managed for different uses. Land use planning refers to the planned development of property typically with the goal of achieving compatibility among uses within and adjacent to the property. Real property "includes structures, buildings, or other infrastructure of a military installation, roadways and defense access roads, and any other area on the grounds of a military installation" (10 USC Section 2661(c)(2)(B)). Department of the Air Force Policy Directive 32-90, *Real Property Management*, outlines the DAF's policies pertaining to the management of DAF real property. AFI 32-9002, *Management of Real Property*, implements Department of the Air Force Policy Directive 32-90 and provides guidance on the effective management of DAF real property including management

of annexations and changes in legislative jurisdictions. The Assistant Secretary of the Air Force for Energy, Installations, and Environment has overall responsibility and oversight of DAF real property.

3.7.2 Affected Environment

The CATM Complex is in the southeastern portion of MacDill AFB, on the western side of Marina Bay Drive (Figure 1-1). In general, the CATM Complex consists of the North and South Ranges and associated armory, parking lot, and access road, and the CATM classroom training facility northeast of the ranges (Figure 2-1). The areas encompassed by the North and South Ranges and adjacent developed grounds, not including the classroom facility, are approximately 4.5 acres; the two ranges combined are approximately 3.5 acres. The CATM Complex is used for CATM training provided by the 6 SFS and 927 SFS and for other small arms training outside the CATM program. The CATM program and infrastructure of the North and South Ranges are described in detail in Section 2.1.

The grounds of the CATM Complex consist of range infrastructure, mowed grass, and landscaped vegetation. The ranges are bordered to the north and south by estuarine intertidal wetlands and the mowed field between the ranges, and Marina Bay Drive is also an estuarine wetland (Section 3.2). The CATM Complex, including the footprints of all the action alternatives, as well as adjacent areas that extend from Marina Bay Drive westward to Raccoon Creek, are classified as *Industrial* land use (DAF 2019). This land use is bordered to the south and east by land use classified as *Outdoor Recreation* and to the north and west by land use classified as *Open Space* (DAF 2019).

The North and South Ranges were both constructed as NCI ranges in 1982. The South Range was converted from an NCI range to an OPCB range in 1998, when the side walls, baffles, and bullet trap were added. A submachine gun range was formerly located within the CATM Complex. The former submachine gun range was approximately 1.65 acres and consisted of two areas, one just north of the North Range and one just south of the South Range. Remediation of the former submachine gun range was completed in 2016. The former submachine gun range is further discussed in Section 3.9.

3.7.3 Environmental Consequences

3.7.3.1 Action Alternatives

The footprints of all the action alternatives are located in the same general area within the CATM Complex. Implementation of all the action alternatives would not change the current land use classification of the CATM Complex, which is *Industrial*, or the classifications of the adjacent land uses, which are *Outdoor Recreation* and *Open Space*. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. Although none of the action alternatives would change the existing land use of the CATM Complex, the alternatives would differ in how they would specifically alter the land within their footprints. None of the alternatives would change the type or amount of small arms training conducted at the CATM Complex.

The footprint of Alternative A encompasses the existing ranges and does not extend beyond the outer base of the berms. Under Alternative A, the North Range would no longer be used for small arms training, although it would not be permanently closed under the MMRP. All small arms training under Alternative A would be conducted on the new 50-meter (164-foot) NCI range that would be constructed within the footprint of the South Range.

Under Alternatives B and C, the North and South Ranges would be demolished, and new, longer NCI ranges would be constructed within the existing range footprint and adjacent field that extends from the ranges to Marina Bay Drive. These alternatives would have similar land modifications and would increase the overall space used for small arms training in this portion of the base. These alternatives would remove existing range infrastructure, create new berms and modify existing berms, and convert much of the adjacent maintained field into an outdoor small arms range.

Under Alternative D, the North and South Ranges would be demolished and permanently closed under the MMRP, and a new indoor small arms range would be constructed. Demolition of the North and South

Ranges under Alternative D would involve removing all existing infrastructure on the ranges as described for Alternatives B and C, as well as the berms of the ranges. Following closure under the MMRP, the area encompassing the former ranges may be left idle, undergo wetland/habitat restoration, or be used for some other purpose. The land use classification of this area would remain as *Industrial* through the range closure process and may change in the future, depending on the future land use of the area. The future land use of the area is unknown at this time, and would depend on the outcome of the range closure process, which may include land use controls as part of the remedial action for the former ranges (further discussed in Section 3.9). The new indoor range proposed under Alternative D would be constructed on the southern side of the CATM classroom training facility (Figure 2-5) in an undeveloped area that includes upland forest, tidal ditch, and estuarine wetland. The footprint for the new indoor range is just east of the former submachine gun range at the site. This former gun range has been remediated and would have no effect on construction of an indoor range within the Alternative D footprint (discussed further in Section 3.9).

In summary, none of the alternatives would change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under any of the alternatives. Lastly, none of the alternatives would result in incompatible or otherwise adverse land modifications within the CATM Complex. For these reasons, all the alternatives would have a less-than-significant impact on land use.

3.7.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on land use resulting from the reconstruction of the CATM Complex as proposed.

3.8 Public Health and Safety

3.8.1 Regulatory Setting

The Occupational Safety and Health Administration (OSHA), which is part of the U.S. Department of Labor, is authorized by the Occupational Safety and Health Act of 1970 to ensure safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance. OSHA issues workplace health and safety regulations that include limits on hazardous chemical exposure, employee access to hazard information, requirements for the use of personal protective equipment, and requirements to prevent falls and hazards from operating dangerous equipment. OSHA standards are published in 29 CFR and are divided into separate standards for General Industry, Construction, and Maritime.

DoDI 6055.1, *DoD Safety and Occupational Health (SOH) Program*, establishes policy and assigned responsibilities for administering a comprehensive DoD safety and occupational health program. The DAF safety and occupational health program is prescribed in DAFI 91-202, *The US Air Force Mishap Prevention Program*. DAF Manual 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, implements Air Force Policy Directive 91-2, *Safety Programs*, and parts of OSHA regulations in 29 CFR.

OSHA regulations do not apply to military personnel or uniquely military equipment, systems, or operations; however, they do apply to DoD assets and operations that are not uniquely military. DAF safety and occupational health standards meet or exceed OSHA standards. For example, military projects must comply with Engineer Manual (EM) 385-1-1, *Safety and Health Requirements*, which includes more stringent requirements than OSHA for several safety categories. EM 385-1-1 also requires a written Accident Prevention Plan and Activity Hazard Analysis for each job performed.

AFI 36-2654, *Combat Arms Program*, describes how to plan and conduct the DAF Combat Arms Program, and addresses small arms range and weapons safety and associated safety training requirements. UFC 4-179-02, *Small Arms Ranges* (DoD 2020), provides criteria and guidance for the design and construction of small arms ranges, including safety features such as berms, bullet traps, and baffles; ventilation systems; and noise attenuation features.

3.8.2 Affected Environment

The primary safety structural features of the CATM Complex are the side walls, overhead baffles, and bullet trap of the South Range and the earthen impact and side berms of the North and South Ranges. Due to old age, design, and environmental factors, the North and South Ranges have several safety deficiencies that do not comply with the design requirements specified in UFC 4-179-02, *Small Arms Ranges* (DoD 2020), or the CATM training requirements specified in AFI 36-2654, *Combat Arms Program*. Both ranges regularly flood during the rainy season due to poor site drainage, especially the North Range. The presence of standing water on the ranges creates a bullet ricochet safety hazard, which prevents use of the ranges. Due to being partially contained, the South Range is susceptible to the accumulation of dust from frangible rounds and gun smoke, which pose a potential health hazard to users. Lastly, the side walls and layout of the South Range limit the instructor's visibility of the firing line from the control booth.

The CATM program includes range and classroom training on small arms safety. Firearm safety is a primary component of the overall CATM curriculum. Range safety regulations require that all firing be level to the ground and in a straight direction toward a target downrange. Firing upward, downward, or at any angle on the range is strictly prohibited and would result in the immediate removal of the user from the range. During CATM training, these and other safety measures are taught during classroom training and are strictly enforced by instructors during training on the range.

The established surface danger zone (SDZ) of the North and South Ranges combined is shown on Figure 3-10. The SDZ is the portions of the range in the horizontal plane where personnel would be endangered by weapons firing. The SDZ includes the area between the firing line and target line, an impact area, a ricochet trajectory area, and a secondary danger area. As shown on Figure 3-10, the SDZ of the CATM ranges extends over *Industrial* land use (CATM Complex) and undeveloped land classified as *Open Space* land use inside the boundary of MacDill AFB, and over the waters of Tampa Bay outside the base boundary. The SDZ of the ranges encompasses approximately 1,476 acres; of this total area, approximately 383 acres are inside the base boundary and 1,093 acres are outside the base boundary.

In addition to the SDZ, small arms ranges also have an established vertical danger zone (VDZ). For noncontained and partially contained ranges, the VDZ is the volume of airspace above the SDZ between the ground surface and the maximum ordinate of a direct-fired or ricochet round. The height of the VDZ varies with the weapon and ammunition fired. For fully contained ranges, the VDZ is the area between the SDZ and the upper limits of containment.

Figure 3-10. Surface Danger Zone of CATM Small Arms Ranges



3.8.3 Environmental Consequences

3.8.3.1 Action Alternatives

Occupational health and safety hazards associated with reconstruction of the CATM Complex under all the action alternatives would include loud noise, heavy machinery, debris, electricity, and hazardous materials used or encountered during work. To minimize such risks, workers would wear and use appropriate personal protective equipment and comply with EM 385-1-1, *Safety and Health Requirements*, which meets or exceeds OSHA standards. A health and safety plan would be developed and implemented by the construction contractor. Work areas would be clearly marked with appropriate signage and secured against unauthorized entry. Standard construction traffic control measures would be implemented as appropriate. All construction and other ground-disturbing activity proposed under each action alternative must be issued a dig permit by MacDill AFB via Air Force (AF) Form 103, *Base Civil Engineering Work Clearance Request*, prior to initiation. Provided that these established safety measures are followed, the overall potential for associated safety impacts to construction workers would be low.

The new ranges and site improvements proposed under each action alternative would eliminate the safety deficiencies of the existing ranges at the CATM Complex. The side walls, overhead baffles, and bullet trap of the South Range would be removed under all the alternatives. OPCB ranges like the South Range are no longer supported by the DAF. Eliminating OPCB features such as the side walls and baffles would improve ventilation and reduce accumulation of airborne dust from frangible rounds and gun smoke, as well as improve the visibility of the firing line by instructors who are monitoring the training. The new ranges under the action alternatives would be required to meet the ventilation requirements specified in UFC 4-179-02, *Small Arms Ranges* (DoD 2020). The new indoor range under Alternative D would have a push-pull ventilation system that supplies air from behind the firing line and removes air from exhausts at the bullet trap to move airborne contaminants downrange and away from the range users. Site drainage improvements would be made under all the action alternatives. Site drainage improvements are particularly important for the outdoor ranges proposed under Alternatives A, B, and C, to prevent the ponding of water on the ranges, which regularly occurs and creates a bullet ricochet safety hazard on the existing ranges.

Under Alternatives A, B, and C, outdoor SDZs and VDZs would be established for the proposed new NCI outdoor ranges. The SDZ and VDZ of the new fully contained indoor range under Alternative D would be confined within the interior of the range. The SDZ for any new outdoor range that is constructed would be developed by the DAF in accordance with Department of the Army Pamphlet 385-63, *Range Safety*, and Marine Corps Order 3570.1C, *Range Safety*. DAF-specific criteria are used to determine minimum VDZ height requirements for DAF ranges. Given that the type of weapons used during CATM training would not change under any of the action alternatives, the SDZs of the new ranges proposed under Alternatives A, B, and C are expected to be similar in size to the SDZ of the existing ranges. The SDZs are expected to differ in location, orientation, and shape; however, they are all expected to be comparable and extend over only undeveloped portions of the base and waters of Tampa Bay.

In conclusion, all the action alternatives would have a less-than-significant impact on public health and safety.

3.8.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, the current safety deficiencies of the existing ranges would continue to impact the CATM program. Current safety hazards such as the bullet ricochet hazard posed by regular ponding of water within the ranges due to poor site drainage would continue to be avoided under the No Action Alternative by not using ranges. This reduces the potential health and safety risks to CATM instructors and students but does not address the associated impacts on the CATM program. Continued use of the existing ranges without improvements would affect only the range users and would have no health or safety impacts on the general public. For these reasons, the No Action Alternative would have a less-than-significant impact on public health and safety.

3.9 Hazardous Materials and Wastes

3.9.1 Regulatory Setting

Hazardous materials have been declared hazardous through federal listings that include Extremely Hazardous Substances listed in Appendix A of 40 CFR 355, "Emergency Planning and Notification"; those listed as hazardous if released, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 40 CFR 302.4, "Designation of Hazardous Substances"; and the definition of hazardous chemicals by OSHA in 29 CFR 1910.1200, "Hazard Communication." Hazardous materials are defined in AFMAN 32-7002, *Environmental Compliance and Pollution Prevention*, to include all items covered under the Emergency Planning and Community Right-to-Know Act or other applicable federal, state, local, or Final Governing Standards tracking or reporting requirements; all items covered by OSHA under 29 CFR 1910.1200, "Hazardous Communication," or 29 CFR 1910.1450, "Occupational Exposure to Hazardous Chemicals in Laboratories"; and Class I or Class II Ozone Depleting Substances.

Hazardous waste is any solid, liquid, or contained gas waste that is dangerous or potentially harmful to human health or the environment. Hazardous wastes are classified under the Resource Conservation and Recovery Act (RCRA) in 40 CFR 261, "Identification and Listing of Hazardous Waste," as either characteristic wastes or listed wastes. Characteristic hazardous wastes exhibit one or more of the following traits: ignitability, reactivity, corrosivity, or toxicity. Listed hazardous wastes are wastes specifically listed as being hazardous and are from specific sources, nonspecific sources, or discarded chemical products.

A toxic substance is a substance that when ingested or absorbed is harmful or fatal to living organisms. Toxicity is an attribute of some hazardous waste. Through the Toxic Substances Control Act, EPA regulates toxic substances such as asbestos, lead-based paint (LBP), polychlorinated biphenyls, radon, and certain perfluoroalkyl and polyfluoroalkyl substances (PFAS). PFAS are a large group of chemical compounds used since the 1950s to make coatings, stain repellents, waterproof clothing, adhesives, wire insulation, and other products. PFAS are commonly used in Class B firefighting foams known as aqueous film-forming foam (AFFF), which are used to extinguish flammable liquid fires such as fuel fires. Certain PFAS are toxic and also pose environmental concerns because they do not break down via natural processes and are considered persistent organic pollutants, or forever chemicals.

Pesticides are substances that control pests; certain pesticides are toxic to humans. Pesticides include herbicides, insecticides, rodenticides, fungicides, and other categories, with herbicides being the most common type of pesticide used. The Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is implemented in the military by DoD Directive 4150.07, *DoD Pest Management Program*. This directive applies to all military pest control activities, including contracted operations, and is implemented by the DAF in AFMAN 32-1053, *Integrated Pest Management Program*.

DoD's Environmental Restoration Program consists of the Installation Restoration Program (IRP), which has been developed to respond to releases of hazardous substances, pollutants, and contaminants, and the MMRP, which has been developed to address sites that contain unexploded ordnance, discarded military munitions, or munitions constituents (MCs). Depending on the circumstances, Environmental Restoration Program sites are investigated and cleaned up in accordance with CERCLA or RCRA, or an integrated approach based on both laws. The DAF currently addresses MMRP sites under CERCLA.

Under the Military Munitions Rule (40 CFR Parts 260–270), a military munition is not a solid waste according to RCRA regulations and, consequently, cannot be a hazardous waste if it is used for its intended purpose on a military range.

3.9.2 Affected Environment

The MacDill AFB Hazardous Waste Management Plan (DAF 2023b) provides guidance on the proper handling and disposal of hazardous waste, including spill contingency and response requirements, on MacDill AFB property. Procedures and responsibilities for responding to a hazardous waste spill or other incident are also addressed in the MacDill AFB Spill Prevention, Control, and Countermeasure Plan (DLA-Energy 2023). Nonhazardous solid waste generated at MacDill AFB is managed in compliance with the MacDill AFB Integrated Solid Waste Management Plan (ISWMP) (DAF 2021). Nonhazardous solid waste is properly collected, handled, transported, and disposed of off-base by a contractor.

MacDill AFB is classified as a Large Quantity Generator of hazardous waste. Wastes on MacDill AFB property are controlled and managed from the point of generation to the point of ultimate disposal. Hazardous wastes are temporarily stored at designated initial accumulation points (IAPs) at work locations. Once the storage limit is reached, the wastes are transferred to the 90-day Hazardous Waste Accumulation Site (Building 1115). Within 90 days, the wastes are transported off-base and disposed of in accordance with applicable regulations. MacDill AFB has separate plans that provide guidance on managing asbestos-containing materials (ACM) and LBP at the base in accordance with all applicable regulations.

3.9.2.1 Site Contamination

There are no active or closed IRP sites within or adjacent to the CATM Complex. The nearest IRP site is located approximately 2,300 feet northwest of the CATM Complex. This IRP site is a former landfill, and it is currently open under the MacDill AFB Environmental Restoration Program. There is one closed MMRP site adjacent to the ranges in the CATM Complex, referred to as the former submachine gun range (Munitions Response Area 290). The former submachine gun range was constructed in the mid-1940s and used to train aircraft gunner personnel (EA and Weston 2022). It encompasses 1.65 acres and consists of two areas, one adjacent to the North Range and one adjacent to the South Range (Figure 3-11). As part of an Interim Remedial Action, soils contaminated with lead and antimony were removed from the former submachine gun range and disposed of offsite (EA and Weston 2022). In April 2016, DEP accepted No Further Action (NFA) as the final remedy for the former submachine gun range (EA and Weston 2022).

The CATM Complex was included in an Operational Range Assessment Program (ORAP) study conducted in 2021 at MacDill AFB to assess whether there is potential for MCs to migrate beyond the installation boundary and pose a risk to human health or the environment (EA and Weston 2022). Based on the ORAP study, MCs from small arms training may be deposited on the North and South Ranges, and historically, MCs may have been deposited in the area from use of the former submachine gun range. Soil sampling results indicate that metals are present within the earthen impact berms of the North and South Ranges. The ORAP study concluded that MCs from the CATM Complex are not expected to be migrating within groundwater to off-base areas and that there are no potential risks to off-base human or ecological receptors (EA and Weston 2022).

It is unknown whether any of the structures within the CATM Complex contain ACM or LBP. As standard practice, older structures proposed to be demolished or modified at MacDill AFB are treated as potentially containing ACM and LBP. A base-wide PFAS remedial investigation (RI), focused on areas where AFFF has been released, is currently being conducted at MacDill AFB. Based on the findings of this RI, no AFFF release areas are within or adjacent to the CATM Complex.

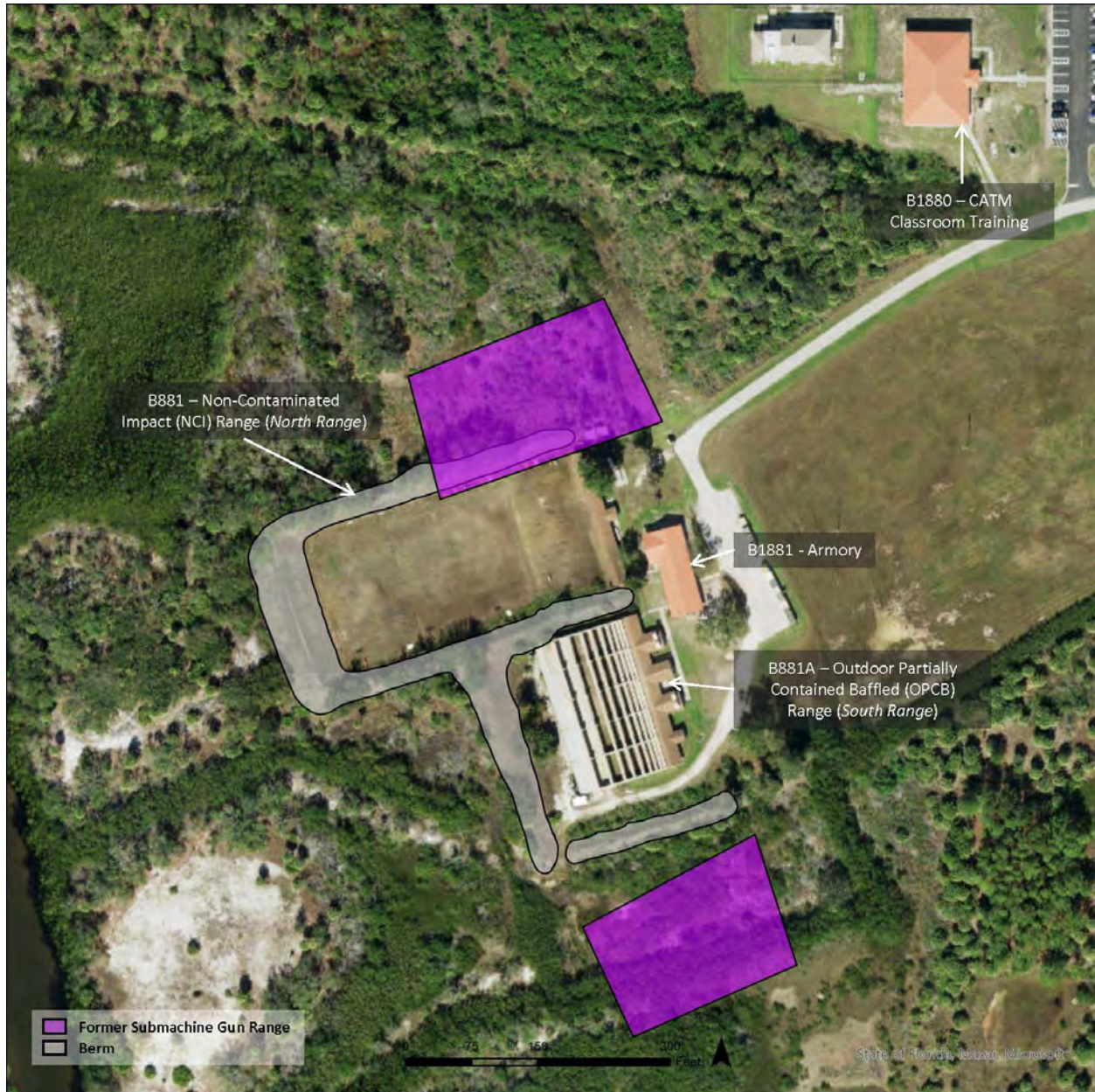
3.9.2.2 Operations

Hazardous materials used at the CATM Complex primarily include POL, paints, and cleaning agents. All weapons and ammunition used on the existing ranges are stored in the armory (Facility B1882) adjacent to the ranges (Figure 2-1). The armory serves as an IAP for waste generated by gun cleaning at the CATM Complex. The waste is in the form of gun cleaning patches and is stored in a 55-gallon steel drum inside the armory.

Both frangible and nonfrangible ammunition are used on the North Range. Frangible bullets are composed of lead-free metallic powders such as copper, whereas nonfrangible bullets typically contain lead, although some types may also be lead free. Frangible bullets are designed to disintegrate into small particles on target impact to minimize penetration and ricochet. Nonfrangible bullets do not disintegrate on impact. Only frangible ammunition is used on the South Range. Frangible bullets disintegrate into small particles when they hit or enter the bullet trap system of the range.

The spent frangible rounds that enter the bullet trap of the South Range are collected in 5-gallon buckets, which when full are temporarily stored in locked metal containers in the CATM Complex parking lot and eventually disposed of offsite by a contractor. The South Range is cleaned monthly by a contractor who services the bullet trap and replaces the filters in the air filtration system. Maintenance activities at the North Range include periodic collection of expended casings. The casings are policed, and brass is sorted and sent for recycling. An annual rod penetration test is conducted at the earthen impact berm of the North Range to determine whether the berm must be sifted to remove embedded bullets. No rod testing or removal of bullets from the historical impact berm of the South Range is known to have occurred (EA and Weston 2022).

Figure 3-11. Former Submachine Gun Range



3.9.3 Environmental Consequences

3.9.3.1 Action Alternatives

3.9.3.1.1 Site Contamination

As discussed, there are no IRP sites within or adjacent to the CATM Complex. There is one closed MMRP site adjacent to the ranges in the CATM Complex, referred to as the former submachine gun range. This site was accepted as NFA by DEP in 2016, following removal of soil contaminated with lead and antimony from the site. The site is permanently closed under the MMRP and has no land use controls that would affect development or use of the site. None of the footprints of the action alternatives are located within the boundaries of the former submachine gun range. Based on the ORAP study conducted in 2022, MC from the CATM Complex is not migrating to off-base areas or posing a risk to off-base human or ecological receptors (EA and Weston 2022). None of the alternatives would increase the potential for MC from the CATM Complex to migrate outside the base boundary.

It is unknown whether any of the structures within the CATM Complex contain ACM or LBP. Older structures proposed to be demolished or modified at MacDill AFB are treated as potentially containing ACM and LBP. The DAF would conduct ACM and LBP surveys for all structures proposed to be demolished at the CATM Complex. Any encountered ACM or LBP would be remediated and disposed of in accordance with MacDill AFB's ACM and LBP management plans and in compliance with all applicable regulations prior to demolition of the structures. Based on the findings of the ongoing base-wide PFAS RI, no AFFF release areas are within or adjacent to the CATM Complex.

3.9.3.1.2 Construction

Reconstruction of the CATM Complex under each action alternative would require the use of hazardous materials such as gasoline, oils, coolant, and lubricants commonly used by construction equipment; paints; solvents; preservatives; and sealants. Equipment servicing and repair activities could temporarily generate oily and hazardous wastes, such as spent solvents, residual fuels, used oils, used batteries, antifreeze, and filters. Handling, storage, and disposal of hazardous materials/waste during construction activities, including measures to prevent releases, would be required to be conducted in accordance with all applicable environmental compliance regulations and MacDill AFB environmental management plans.

Construction, demolition, and tree-clearing activities under Alternative A would generate nonhazardous, construction-related solid waste such as scrap metal, rubble, and stripped vegetation. Such solid waste would be disposed at an off-base landfill or recycled/reused as appropriate. Solid waste generated during construction and demolition activities would be managed in accordance with the MacDill AFB ISWMP.

Worker safety during construction would be required to comply with EM 385-1-1, *Safety and Health Requirements*, which meets or exceeds OSHA standards. Soil sampling results indicate that metals are present within the earthen impact berms of the North and South Ranges. Therefore, the construction contractor would be required to properly manage soil and control airborne levels of dust during earthwork, in coordination with the 6th Civil Engineer Squadron/Environmental Element (6 CES/CEIE), and in accordance with MacDill AFB Environmental Restoration Program protocols and all applicable environmental regulations.

3.9.3.1.3 Operations

None of the alternatives would change the type or amount of small arms training that is conducted at the CATM Complex. Therefore, the types and quantities of hazardous materials used and hazardous wastes generated at the reconstructed CATM Complex would be the same as under existing conditions. The hazardous materials and any associated wastes would continue to be handled, stored, and disposed in compliance with all applicable regulations and MacDill AFB plans.

Gun cleaning waste would continue to be generated under all the alternatives. The associated waste would continue to be temporarily stored in the designated IAP location, which would vary among the alternatives. Under Alternative A, the existing armory would continue to serve as the IAP location for the gun cleaning waste. Under Alternatives B and C, the IAP would be located in the new armories proposed under those alternatives. Under Alternative D, the IAP would likely be in the weapon cleaning room within the new indoor range.

Lead, copper, antimony, arsenic, tin, and other metals are used in the manufacture of firearm ammunition, with lead being the primary constituent of munitions used at most small arms ranges. Accumulation of lead and copper, and other metals in lesser concentrations, in soils on active outdoor shooting ranges is common (Bannon et al. 2009; EPA 2005). In soils at small arms ranges, particularly around the berms or backstops, lead may exist relatively intact within copper-jacketed bullets; as small lead particles created from bullet fragmentation; or as oxidized forms of lead such as lead carbonate or lead oxide as a result of physical and/or chemical weathering processes (Bannon et al. 2009). Breakdown and dissolution of lead occurs more rapidly in acidic soils; when dissolved in rainwater, lead migrates more readily away from its source (EPA 2005).

Under Alternatives A, B, and C, both frangible and nonfrangible ammunition would be used on the respective new NCI outdoor ranges proposed under these alternatives. Only frangible ammunition would

be used in the new indoor range proposed under Alternative D. The bullet trap system of the new indoor range would be more advanced than the bullet trap of the South Range; however, spent frangible rounds from the bullet trap would continue to be collected and disposed of offsite in a similar manner under Alternative D. Maintenance of the new outdoor ranges proposed under Alternatives A, B, and C would be similar to the maintenance conducted for the North Range, which includes periodic removal of spent casings, rod penetration tests of the impact berm, and necessary removal of embedded bullets from the impact berm.

Under Alternative D, the North and South Ranges would be demolished and permanently closed under the MMRP. Demolition of the ranges would involve removing all the existing infrastructure and earthen berms of the ranges. Closure of the CATM Complex under the MMRP would involve assessments of site contamination by lead and other metal constituents of firearm ammunition, and as-needed remediation of any contamination. The MMRP closure process would be managed by the 6 CES/CEIE and in accordance with MacDill AFB MMRP protocols and all applicable environmental regulations.

3.9.3.1.4 Conclusion

Based on the lack of active IRP or MMRP sites within the CATM Complex, results of past MC studies, and with proper management of hazardous materials and wastes during construction and operation of the reconstructed CATM Complex, all the action alternatives would have a less-than-significant impact associated with hazardous materials and wastes.

3.9.3.2 No Action Alternative

Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner. Therefore, there would be no effect on or from hazardous materials or wastes resulting from the reconstruction of the CATM Complex as proposed.

3.10 Cumulative Impacts

Cumulative impacts are defined in the CEQ regulations implementing provisions of NEPA (40 CFR 1508.7) as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

3.10.1 Past, Present, and Reasonably Foreseeable Future Actions

MacDill AFB has been an active military installation for over 80 years, from its beginning in 1941 to the present. MacDill AFB's overall mission and the type and level of military operations conducted at the base have not undergone major changes since 2008, when the 6th Mobility Wing (redesignated as the 6th Air Refueling Wing) became the host unit at the base. The planned replacement of the 6th Air Refueling Wing's fleet of KC-135 refueling aircraft with KC-46A refueling aircraft starting in 2028 is the primary foreseeable future mission action at MacDill AFB.

Various projects involving improvements to existing on-base facilities, roads, and utility systems and construction of new infrastructure have been conducted at MacDill AFB as needed to support the base's mission. Infrastructure improvements will continue to be needed to support MacDill AFB's mission, and they constitute the primary foreseeable future mission-support actions at the base. There is little land at MacDill AFB that is not already developed, is not dedicated to airfield use, or does not have environmental or other constraints that restrict development. Therefore, the majority of foreseeable future infrastructure projects at the base would involve renovation and replacement of existing infrastructure. Most foreseeable development projects at MacDill AFB that would involve construction of new facilities on undeveloped land would have a relatively small construction footprint. The planned beddown of the KC-46A refueling aircraft at MacDill AFB would involve the renovation and replacement of several facilities that support the existing fleet of KC-135 refueling aircraft, as well as the construction of new facilities on and near the airfield.

MacDill AFB is bordered by the waters of Tampa Bay to the west, south, and east, and by the city of Tampa to the north. The other portions of the Tampa Bay area nearest MacDill AFB include the cities of Saint Petersburg and Clearwater on the western side of Tampa Bay and the cities of Gibsonton and Apollo Beach on the eastern side of Tampa Bay. The Tampa Bay area has experienced steady population and economic growth over the years; past and present major actions are primarily associated with residential and commercial development and construction of regional infrastructure such as roadways and utility systems. Numerous capital improvement projects that would involve improvements to transportation, utility, and other infrastructure are planned over the next 5 years by the cities and counties that make up the Tampa Bay area, including projects to repair and improve roadways for better mobility, projects to upgrade stormwater pipes, drains, and detention systems, and projects to improve wastewater collection and treatment systems in the area. The ongoing construction of a new southbound span of the Howard Frankland Bridge that connects the cities of Tampa and Saint Petersburg is one of the largest development projects currently underway in the area. Notable planned future projects in the area include the Tampa Harbor Navigation Improvement Project, which would involve deepening ship channels and turning basins throughout Tampa Harbor to allow larger vessels to efficiently access Port Tampa Bay's terminals.

3.10.2 Assessment of Cumulative Impacts by Resource

The Proposed Action would have no appreciable effect on airspace, infrastructure, socioeconomics, environmental justice, or cultural resources. Therefore, when added to past, present, and reasonably foreseeable actions, the Proposed Action is not expected to have significantly adverse cumulative impacts on any of these resources. The potential cumulative impacts of the Proposed Action on air quality, water resources, geological resources, biological resources, noise, land use, public health and safety, and hazardous materials and wastes are discussed in the subsections that follow.

3.10.2.1 Air Quality and Climate Change

Air emissions in Hillsborough County originate primarily from burning of fossil fuels (for example, coal, oil, and natural gas), industrial and commercial facilities, vehicular traffic, military air operations, non-military flight activity, construction activity, and prescribed burning. Construction emissions of criteria pollutants, VOCs, and GHGs under all the alternatives analyzed would be temporary and well below insignificance thresholds. Steady increases in emissions as a result of population growth can be expected in the Tampa Bay area. Large regional infrastructure projects to accommodate this growth, such as the construction of a new span of the Howard Frankland Bridge, are currently ongoing in the area. Air emissions from these and other construction projects in the area would be temporary. There would be no effect on air quality from operation of the reconstructed CATM Complex under each alternative. Estimated increases in air emissions from foreseeable future actions at MacDill AFB, the largest being the planned beddown and operations of the KC-46A refueling aircraft at the base, are not expected to be significant (DAF 2023c). Based on the estimated quantities of air emissions under each alternative, projected air emissions from other sources, and the attainment status of the area, none of the alternatives would have adverse cumulative impacts on air quality or climate change when combined with other unrelated actions.

3.10.2.2 Water Resources

Reconstruction of the CATM Complex under Alternative A, the preferred alternative, would have no impact on wetlands or other surface waters. Compensatory wetland mitigation would be provided to offset the unavoidable wetland impacts that would result under the other alternatives, if any of them are implemented. Therefore, none of the alternatives would contribute to cumulative loss of wetlands or other surface waters when combined with other unrelated actions. All the alternatives would be located in the floodplain; however, only Alternative D would add additional impervious area and displace floodplain. The displacement of 0.5 acre of floodplain under Alternative D would be insignificant and would not result in adverse cumulative impacts on floodplain area or functions when combined with other actions. Potential indirect cumulative impacts on wetlands/waters under the alternatives and other construction projects in the region would be minimized by BMPs and engineering controls that are required by regulation to be

implemented. Based on the required compensatory wetland mitigation that would be provided for any unavoidable wetland impacts and the required measures that would be implemented to prevent indirect wetland impacts by all the alternatives and by other unrelated projects in the region, none of the alternatives would have adverse cumulative impacts on water resources when combined with past, present, or future actions.

3.10.2.3 Geological Resources

All the alternatives would disturb soils during construction activities. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development including construction of the CATM Complex, former adjacent submachine gun ranges, and the extensive network of drainage ditches in the area. There are no prime or unique farmland soils on MacDill AFB. Potential impacts on soils from most other ongoing and foreseeable future development projects in the area would be comparable. Measures to prevent and minimize soil erosion are required to be implemented by regulation for the Proposed Action and for other projects that involve land disturbance. For these reasons, no adverse cumulative impacts to soils are expected to result from the combination of Alternative 1 with other unrelated actions in the area.

3.10.2.4 Biological Resources

Impacts to vegetation (natural and landscaped) under the alternatives would vary from approximately 0.7 acre under Alternative A, the preferred alternative, to approximately 4.6 acres under Alternative C. The vegetation and associated wildlife habitat that would be displaced under each alternative are largely disturbed. Construction noise would be temporary and is expected to have no appreciable effect on wildlife. Based on noise modeling, operation of the new outdoor ranges proposed under Alternatives A, B, and C would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on these factors, none of the alternatives would have adverse cumulative impacts on vegetation or wildlife when combined with past, present, or future actions. Reconstruction of the CATM Complex under all the alternatives would not adversely affect any federally listed species and, therefore, would not result in adverse cumulative impacts on such species. For these reasons, none of the alternatives would have adverse cumulative impacts on biological resources when combined with other unrelated actions.

3.10.2.5 Noise

Based on noise modeling conducted for this EA, operation of the new outdoor ranges proposed under Alternatives A, B, and C would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions. Operation of the new fully enclosed indoor range proposed under Alternative D would result in lower outdoor noise levels than existing conditions. If small arms training at the CATM Complex is concurrent with other noise sources in the area, which primarily include the skeet range and practice grenade range to the north, the resulting cumulative noise may cause greater noise disturbance to receptors in the area. The skeet range is used approximately 50 days per year, and the practice grenade range is used about 4 days per year. Based on the noise levels generated by small arms training at the CATM Complex and the relatively low frequency of these other noise events, adverse cumulative noise impacts are not expected when small arms noise is concurrent with noise from these other sources. The resulting cumulative noise would be intermittent and would not have a continuous effect on any single area.

3.10.2.6 Land Use

None of the alternatives under the Proposed Action would change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under any of the alternatives. Lastly, none of the alternatives would result in incompatible or otherwise adverse land modifications within the CATM

Complex. For these reasons, none of the alternatives would have adverse cumulative impacts on land use when combined with past, present, or future actions.

3.10.2.7 Public Health and Safety

Occupational health and safety requirements under the Proposed Action would include compliance with EM 385-1-1, *Safety and Health Requirements*, which meets or exceeds OSHA standards, and obtaining an AF Form 103 dig permit prior to initiation of ground-disturbing activities. The new ranges and site improvements proposed under each alternative would eliminate the safety deficiencies of the existing ranges at the CATM Complex, which include poor ventilation and firing line visibility at the South Range and ponding of water on both ranges, which creates a bullet ricochet safety hazard. When the elimination of these deficiencies is combined with the proposed new ranges, which have upgraded safety features, each alternative would have beneficial cumulative impacts on health and safety. The SDZs of the new outdoor ranges proposed under Alternatives A, B, and C are expected to be similar in size to the SDZ of the existing ranges. The SDZs are expected to differ in location, orientation, and shape; however, they are all expected to be comparable and extend over only undeveloped portions of the base and waters of Tampa Bay. Therefore, none of the alternatives would have an SDZ that would increase the safety hazard within or outside MacDill AFB and, therefore would have no associated cumulative impacts on public health and safety.

3.10.2.8 Hazardous Materials and Wastes

There are no active IRP or MMRP sites within the CATM Complex, and none of the alternatives would increase the potential for MC from the CATM Complex to migrate outside the base boundary. The type or amount of small arms training that is conducted at the CATM Complex would not change under the Proposed Action; therefore, the types and quantities of hazardous materials used and hazardous wastes generated would not change. For these reasons, none of the alternatives would have adverse cumulative impacts on hazardous materials and wastes when combined with other unrelated actions.

3.11 Summary of Environmental Consequences

The potential environmental consequences of Alternatives A, B, C, and D on the resources analyzed in this EA are summarized in Table 3-26.

Table 3-26. Summary of Potential Impacts to Resource Areas

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Airspace Use and Management	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex would have no effect on the classification, dimensions, or other parameters of MacDill AFB's Class D airspace or any other existing airspace. It would have no potential to result in airspace restrictions or congestion, or otherwise impact air traffic control or military or non-military use of any airspace. There would be no effect on the potential for bird/wildlife-aircraft strikes or on the Bird/Wildlife Aircraft Strike Hazard program of MacDill AFB.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex would have no effect on the classification, dimensions, or other parameters of MacDill AFB's Class D airspace or any other existing airspace. It would have no potential to result in airspace restrictions or congestion, or otherwise impact air traffic control or military or non-military use of any airspace. There would be no effect on the potential for bird/wildlife-aircraft strikes or on the Bird/Wildlife Aircraft Strike Hazard program of MacDill AFB.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex would have no effect on the classification, dimensions, or other parameters of MacDill AFB's Class D airspace or any other existing airspace. It would have no potential to result in airspace restrictions or congestion, or otherwise impact air traffic control or military or non-military use of any airspace. There would be no effect on the potential for bird/wildlife-aircraft strikes or on the Bird/Wildlife Aircraft Strike Hazard program of MacDill AFB.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex would have no effect on the classification, dimensions, or other parameters of MacDill AFB's Class D airspace or any other existing airspace. It would have no potential to result in airspace restrictions or congestion, or otherwise impact air traffic control or military or non-military use of any airspace. There would be no effect on the potential for bird/wildlife-aircraft strikes or on the Bird/Wildlife Aircraft Strike Hazard program of MacDill AFB.</p>
Air Quality and Climate Change	<p><i>Less than Significant Impact</i></p> <p>Based on the quantities of criteria pollutants, VOCs, and fugitive dust estimated to be generated, reconstruction of the CATM Complex would have a less than significant impact on air quality. Measures to control fugitive dust during construction are identified in Section 4.1. The Proposed Action would not affect the number of personnel who use the CATM Complex; therefore, there would be no change in air emissions associated with commuter traffic to and from the CATM Complex. Alternative A would not affect permitted stationary sources of air emissions at MacDill AFB. The quantities of GHGs estimated that would be generated under each alternative would be well below the insignificance threshold of 68,039 mtpy established by DAF for GHG emissions and, therefore, would be insignificant. Alternative A would have a less than significant impact on climate change. The potential impacts of climate change over time on Alternative A are discussed in Section 3.1.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Based on the quantities of criteria pollutants, VOCs, and fugitive dust estimated to be generated, reconstruction of the CATM Complex would have a less than significant impact on air quality. Measures to control fugitive dust during construction are identified in Section 4.1. The Proposed Action would not affect the number of personnel who use the CATM Complex; therefore, there would be no change in air emissions associated with commuter traffic to and from the CATM Complex. Alternative B would not affect permitted stationary sources of air emissions at MacDill AFB. The quantities of GHGs estimated that would be generated under each alternative would be well below the insignificance threshold of 68,039 mtpy established by DAF for GHG emissions and, therefore, would be insignificant. Alternative B would have a less than significant impact on climate change. The potential impacts of climate change over time on Alternative B are discussed in Section 3.1.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Based on the quantities of criteria pollutants, VOCs, and fugitive dust estimated to be generated, reconstruction of the CATM Complex would have a less than significant impact on air quality. Measures to control fugitive dust during construction are identified in Section 4.1. The Proposed Action would not affect the number of personnel who use the CATM Complex; therefore, there would be no change in air emissions associated with commuter traffic to and from the CATM Complex. Alternative C would not affect permitted stationary sources of air emissions at MacDill AFB. The quantities of GHGs estimated that would be generated under each alternative would be well below the insignificance threshold of 68,039 mtpy established by DAF for GHG emissions and, therefore, would be insignificant. Alternative C would have a less than significant impact on climate change. The potential impacts of climate change over time on Alternative C are discussed in Section 3.1.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Based on the quantities of criteria pollutants, VOCs, and fugitive dust estimated to be generated, reconstruction of the CATM Complex would have a less than significant impact on air quality. Measures to control fugitive dust during construction are identified in Section 4.1. The Proposed Action would not affect the number of personnel who use the CATM Complex; therefore, there would be no change in air emissions associated with commuter traffic to and from the CATM Complex. Alternative D would not affect permitted stationary sources of air emissions at MacDill AFB. The quantities of GHGs estimated that would be generated under each alternative would be well below the insignificance threshold of 68,039 mtpy established by DAF for GHG emissions and, therefore, would be insignificant. Alternative D would have a less than significant impact on climate change. The potential impacts of climate change over time on Alternative D are discussed in Section 3.1.3.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Water Resources	<p><i>Less than Significant Impact</i></p> <p>Reconstruction of the CATM Complex under Alternative A would have no impact on wetlands or other surface waters.</p> <p>Alternative A would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. Alternative A would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Potential BMPs and engineering controls for Alternative A are identified in Section 4.2.</p> <p>The footprint of Alternative A is located in the floodplain, as is most of the landmass of MacDill AFB. Alternative A would not add additional impervious area and, therefore, would not displace floodplain. There are no practicable alternatives to reconstructing the CATM Complex in the floodplain because the entire area that is designated for small arms training at MacDill AFB is in the floodplain. No new facilities that would be occupied by personnel are proposed under Alternative A. With proper management of hazardous materials and wastes during construction, Alternative A would have no adverse effect on groundwater.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative B is estimated to impact a total of 2.76 acres of wetland. The wetland impacts would require a federal CWA Section 404 permit from USACE, a state ERP from SWFWMD, and authorization from EPC. Compensatory wetland mitigation would be provided to offset the unavoidable wetland impacts. There are no practicable alternatives to reconstructing the CATM Complex in wetlands under Alternative B based on the extensive coverage of wetlands adjacent to the CATM Complex and the space needed. Reasonable alternatives for the Proposed Action must be in proximity to the CATM classroom training facility adjacent to the CATM small arms ranges. Based on the wetland coverage in the area, wetland impacts would be unavoidable under Alternative B, regardless of range layout. Alternative A, the preferred alternative, would not result in any wetland impacts and, therefore, would be a practicable alternative to the implementation of Alternative B. Unavoidable wetland impacts under Alternative B would be offset by purchasing wetland mitigation credits from the MPMB. The type, number, and cost of the MPMB wetland credits estimated to be needed under Alternative B are provided in Section 3.2.3.</p> <p>Alternative B would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. Alternative B would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Potential BMPs and engineering controls for Alternative B are identified in Section 4.2.</p> <p>The footprint of Alternative B is located in the floodplain, as is most of the landmass of MacDill AFB. Alternative B would not add additional impervious area and, therefore, would not displace floodplain. There are no practicable alternatives to reconstructing the CATM Complex in the floodplain because the entire area that is designated for small arms training at MacDill AFB is in the floodplain. No new facilities that would be occupied by personnel are proposed under Alternative B. With proper management of hazardous materials and wastes during construction, Alternative B would have no adverse effect on groundwater.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative C is estimated to impact a total of 3.46 acres of wetland. The wetland impacts would require a federal CWA Section 404 permit from USACE, a state ERP from SWFWMD, and authorization from EPC. Compensatory wetland mitigation would be provided to offset the unavoidable wetland impacts. There are no practicable alternatives to reconstructing the CATM Complex in wetlands under Alternative C based on the extensive coverage of wetlands adjacent to the CATM Complex and the space needed. Reasonable alternatives for the Proposed Action must be in proximity to the CATM classroom training facility adjacent to the CATM small arms ranges. Based on the wetland coverage in the area, wetland impacts would be unavoidable under Alternative C, regardless of range layout. Alternative A, the preferred alternative, would not result in any wetland impacts and, therefore, would be a practicable alternative to the implementation of Alternative C. Unavoidable wetland impacts under Alternative C would be offset by purchasing wetland mitigation credits from the MPMB. The type, number, and cost of the MPMB wetland credits estimated to be needed under Alternative C are provided in Section 3.2.3.</p> <p>Alternative C would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. Alternative C would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Potential BMPs and engineering controls for Alternative C are identified in Section 4.2.</p> <p>The footprint of Alternative C is located in the floodplain, as is most of the landmass of MacDill AFB. Alternative C would not add additional impervious area and, therefore, would not displace floodplain. There are no practicable alternatives to reconstructing the CATM Complex in the floodplain because the entire area that is designated for small arms training at MacDill AFB is in the floodplain. No new facilities that would be occupied by personnel are proposed under Alternative C. With proper management of hazardous materials and wastes during construction, Alternative B would have no adverse effect on groundwater.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative D is estimated to impact a total of 0.16 acre of wetland. The wetland impacts would require a federal CWA Section 404 permit from USACE, a state ERP from SWFWMD, and authorization from EPC. Compensatory wetland mitigation would be provided to offset the unavoidable wetland impacts. There are no practicable alternatives to reconstructing the CATM Complex in wetlands under Alternative D based on the extensive coverage of wetlands adjacent to the CATM Complex and the space needed. Reasonable alternatives for the Proposed Action must be in proximity to the CATM classroom training facility adjacent to the CATM small arms ranges. Based on the wetland coverage in the area, wetland impacts would be unavoidable under Alternative D, regardless of range layout. Alternative A, the preferred alternative, would not result in any wetland impacts and, therefore, would be a practicable alternative to the implementation of Alternative D. Unavoidable wetland impacts under Alternative D would be offset by purchasing wetland mitigation credits from the MPMB. The type, number, and cost of the MPMB wetland credits estimated to be needed under Alternative D are provided in Section 3.2.3.</p> <p>Alternative D would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. Alternative D would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Potential BMPs and engineering controls for Alternative D are identified in Section 4.2.</p> <p>The footprint of Alternative D is located in the floodplain, as is most of the landmass of MacDill AFB. Alternative D would result in a net increase in impervious area and, therefore, would displace floodplain. Based on preliminary planning, Alternative D is expected to displace less than 0.5 acre of floodplain. There are no practicable alternatives to reconstructing the CATM Complex in the floodplain because the entire area that is designated for small arms training at MacDill AFB is in the floodplain. The indoor range under Alternative D would be occupied and, therefore, would be elevated above the floodplain (lowest floor) to minimize operational impacts from flood events. With proper management of hazardous materials and wastes during construction, Alternative B would have no adverse effect on groundwater.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Geological Resources	<p><i>Less than Significant Impact</i></p> <p>Alternative A would physically disturb soils during construction activities. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development. There are no prime or unique farmland soils on MacDill AFB. Alternative A would involve the least earthwork among the alternatives, and it would have no appreciable effect on site topography. The potential for soil erosion and sedimentation impacts during construction would be minimized by the measures identified in Section 3.3.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative B would physically disturb soils during construction activities. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development. There are no prime or unique farmland soils on MacDill AFB. Estimates of fill volumes for Alternative B are provided in Section 3.3.3. Alternative B would affect site topography by adding new berms to the site. The potential for soil erosion and sedimentation impacts during construction would be minimized by the measures identified in Section 3.3.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative C would physically disturb soils during construction activities. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development. There are no prime or unique farmland soils on MacDill AFB. Estimates of fill volumes for Alternative C are provided in Section 3.3.3. Alternative C would affect site topography by adding new berms to the site. The potential for soil erosion and sedimentation impacts during construction would be minimized by the measures identified in Section 3.3.3.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative D would physically disturb soils during construction activities. Soils within the CATM Complex and adjacent areas have been previously disturbed by past land development. There are no prime or unique farmland soils on MacDill AFB. Estimates of fill volumes for Alternative D are provided in Section 3.3.3. Alternative D would affect site topography by removing the existing berms at the site. Elevating the indoor range under Alternative D above the floodplain (lowest floor) would require fill, which would also alter site topography. The potential for soil erosion and sedimentation impacts during construction would be minimized by the measures identified in Section 3.3.3.</p>
Cultural Resources	<p><i>No Effect</i></p> <p>There are no known archaeological sites within or adjacent to the footprint of Alternative A. Based on the locations of the nearest known archaeological sites, there would be no potential for any of them to be impacted by Alternative A. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of the two historic districts on the base. Therefore, no impacts to architectural resources are expected to result from Alternative A. SHPO stated that it finds that "no historic properties will be affected by the proposed undertakings." Measures that would be implemented to protect any inadvertent finds of cultural materials during construction are identified in Section 4.3. MacDill AFB is consulting with the four affiliated Native American tribes in accordance with Section 106 of the NHPA on the Proposed Action.</p>	<p><i>No Effect</i></p> <p>There are no known archaeological sites within or adjacent to the footprint of Alternative B. Based on the locations of the nearest known archaeological sites, there would be no potential for any of them to be impacted by Alternative B. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of the two historic districts on the base. Therefore, no impacts to architectural resources are expected to result from Alternative B. SHPO stated that it finds that "no historic properties will be affected by the proposed undertakings." Measures that would be implemented to protect any inadvertent finds of cultural materials during construction are identified in Section 4.3. MacDill AFB is consulting with the four affiliated Native American tribes in accordance with Section 106 of the NHPA on the Proposed Action.</p>	<p><i>No Effect</i></p> <p>There are no known archaeological sites within or adjacent to the footprint of Alternative C. Based on the locations of the nearest known archaeological sites, there would be no potential for any of them to be impacted by Alternative C. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of the two historic districts on the base. Therefore, no impacts to architectural resources are expected to result from Alternative C. SHPO stated that it finds that "no historic properties will be affected by the proposed undertakings." Measures that would be implemented to protect any inadvertent finds of cultural materials during construction are identified in Section 4.3. MacDill AFB is consulting with the four affiliated Native American tribes in accordance with Section 106 of the NHPA on the Proposed Action.</p>	<p><i>No Effect</i></p> <p>There are no known archaeological sites within or adjacent to the footprint of Alternative D. Based on the locations of the nearest known archaeological sites, there would be no potential for any of them to be impacted by Alternative D. The CATM ranges are not historic structures, and they are not located near any historic buildings or either of the two historic districts on the base. Therefore, no impacts to architectural resources are expected to result from Alternative D. SHPO stated that it finds that "no historic properties will be affected by the proposed undertakings." Measures that would be implemented to protect any inadvertent finds of cultural materials during construction are identified in Section 4.3. MacDill AFB is consulting with the four affiliated Native American tribes in accordance with Section 106 of the NHPA on the Proposed Action.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Biological Resources	<p><i>Less than Significant Impact</i></p> <p>Alternative A would impact approximately 0.7 acre of vegetation (natural and landscaped). The vegetation and associated wildlife habitat that would be displaced are largely disturbed. Any bird nests found during construction would be avoided to the extent practicable, and an existing osprey nest on a light pole within the interior of the North Range would be removed by the MacDill Natural Resources Office in coordination with FWC when it is inactive. Measures to protect bird nests and birds protected under the MBTA are identified in Section 4.4. Construction noise would be temporary and is expected to have no appreciable effect on wildlife. Based on noise modeling conducted for the EA, operation of the new outdoor range under Alternative A would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on the strictly enforced range safety measures and the heights of the berms, there would be virtually no potential for any bullet fired on the outdoor range to overshoot the impact berm or side berms and potentially harm wildlife under Alternative A.</p> <p>The DAF has determined that reconstruction of the CATM Complex under Alternative A, the preferred alternative, may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. USFWS concurred with the DAF's effect determinations for these species for the preferred alternative The DAF has determined that Alternative A would have no effect on any other federally listed species.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative B would impact approximately 4 acres of vegetation (natural and landscaped). The vegetation and associated wildlife habitat that would be displaced are largely disturbed. Any bird nests found during construction would be avoided to the extent practicable, and an existing osprey nest on a light pole within the interior of the North Range would be removed by the MacDill Natural Resources Office in coordination with FWC when it is inactive. Measures to protect bird nests and birds protected under the MBTA are identified in Section 4.4. Construction noise would be temporary and is expected to have no appreciable effect on wildlife. Based on noise modeling conducted for the EA, operation of the new outdoor range under Alternative B would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on the strictly enforced range safety measures and the heights of the berms, there would be virtually no potential for any bullet fired on the outdoor range to overshoot the impact berm or side berms and potentially harm wildlife under Alternative B.</p> <p>The DAF has determined that reconstruction of the CATM Complex under Alternative B may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. Under Section 7 of the ESA, USFWS consults on only one action/alternative; therefore, concurrence from USFWS on Alternative B would be sought if and when it is proposed to be implemented.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative C would impact approximately 4.6 acres of vegetation (natural and landscaped). The vegetation and associated wildlife habitat that would be displaced are largely disturbed. Any bird nests found during construction would be avoided to the extent practicable, and an existing osprey nest on a light pole within the interior of the North Range would be removed by the MacDill Natural Resources Office in coordination with FWC when it is inactive. Measures to protect bird nests and birds protected under the MBTA are identified in Section 4.4. Construction noise would be temporary and is expected to have no appreciable effect on wildlife. Based on noise modeling conducted for the EA, operation of the new outdoor range under Alternative C would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on the strictly enforced range safety measures and the heights of the berms, there would be virtually no potential for any bullet fired on the outdoor range to overshoot the impact berm or side berms and potentially harm wildlife under Alternative C.</p> <p>The DAF has determined that reconstruction of the CATM Complex under Alternative C may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. Under Section 7 of the ESA, USFWS consults on only one action/alternative; therefore, concurrence from USFWS on Alternative C would be sought if and when it is proposed to be implemented.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative D would impact approximately 3.9 acres of vegetation (natural and landscaped). The vegetation and associated wildlife habitat that would be displaced are largely disturbed. Any bird nests found during construction would be avoided to the extent practicable, and an existing osprey nest on a light pole within the interior of the North Range would be removed by the MacDill Natural Resources Office in coordination with FWC when it is inactive. Measures to protect bird nests and birds protected under the MBTA are identified in Section 4.4. Construction noise would be temporary and is expected to have no appreciable effect on wildlife. Based on noise modeling conducted for the EA, operation of the new outdoor range under Alternative D would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions and, therefore, would not increase the potential for noise disturbance to wildlife. Based on the strictly enforced range safety measures and the heights of the berms, there would be virtually no potential for any bullet fired on the outdoor range to overshoot the impact berm or side berms and potentially harm wildlife under Alternative D.</p> <p>The DAF has determined that reconstruction of the CATM Complex under Alternative D may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. Under Section 7 of the ESA, USFWS consults on only one action/alternative; therefore, concurrence from USFWS on Alternative D would be sought if and when it is proposed to be implemented.</p>
Noise	<p><i>Less than Significant Impact</i></p> <p>Construction noise impacts on NSAs would be limited to temporary disturbance and would not be significantly adverse. Based on noise modeling, operation of the new outdoor range under Alternative A would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions. The on-base family housing area, which is the nearest NSA to the CATM Complex, is well outside the predicted 87-dBP noise contour for Alternative A. The impulsive small arms noise would be well below the threshold level for temporary hearing loss, which is 140 dBP.</p>	<p><i>Less than Significant Impact</i></p> <p>Construction noise impacts on NSAs would be limited to temporary disturbance and would not be significantly adverse. Based on noise modeling, operation of the new outdoor range under Alternative B would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions. The on-base family housing area, which is the nearest NSA to the CATM Complex, is well outside the predicted 87-dBP noise contour for Alternative B. The impulsive small arms noise would be well below the threshold level for temporary hearing loss, which is 140 dBP.</p>	<p><i>Less than Significant Impact</i></p> <p>Construction noise impacts on NSAs would be limited to temporary disturbance and would not be significantly adverse. Based on noise modeling, operation of the new outdoor range under Alternative C would have no appreciable effect on noise levels or noise propagation from the CATM Complex relative to existing conditions. The on-base family housing area, which is the nearest NSA to the CATM Complex, is well outside the predicted 87-dBP noise contour for Alternative C. The impulsive small arms noise would be well below the threshold level for temporary hearing loss, which is 140 dBP.</p>	<p><i>Less than Significant Impact</i></p> <p>Construction noise impacts on NSAs would be limited to temporary disturbance and would not be significantly adverse. Operation of the new fully enclosed indoor range proposed under Alternative D would result in lower outdoor noise levels than existing conditions.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Infrastructure	<p><i>No Effect</i></p> <p>The Proposed Action would not involve employee hires or otherwise change the number of persons working at MacDill AFB and, therefore, would not affect the utility demand at the base. Existing electrical, water, and sewer utilities at the site would be used for the new range under Alternative A. Construction-related traffic would be intermittent, localized (limited to defined haul routes), and temporary (limited to the construction period).</p>	<p><i>No Effect</i></p> <p>The Proposed Action would not involve employee hires or otherwise change the number of persons working at MacDill AFB and, therefore, would not affect the utility demand at the base. Existing electrical, water, and sewer utilities at the site would be used for the new range under Alternative B. The existing access road and parking lot would be demolished and rebuilt. Any new access road that is constructed would not require modifications to Marina Bay Drive. Construction-related traffic would be intermittent, localized (limited to defined haul routes), and temporary (limited to the construction period).</p>	<p><i>No Effect</i></p> <p>The Proposed Action would not involve employee hires or otherwise change the number of persons working at MacDill AFB and, therefore, would not affect the utility demand at the base. Existing electrical, water, and sewer utilities at the site would be used for the new range under Alternative C. The existing access road and parking lot would be demolished and rebuilt. Any new access road that is constructed would not require modifications to Marina Bay Drive. Construction-related traffic would be intermittent, localized (limited to defined haul routes), and temporary (limited to the construction period).</p>	<p><i>No Effect</i></p> <p>The Proposed Action would not involve employee hires or otherwise change the number of persons working at MacDill AFB and, therefore, would not affect the utility demand at the base. Existing electrical, water, and sewer utilities at the site would be used for the new range under Alternative D. The existing access road and parking lot would be demolished and rebuilt. Any new access road that is constructed would not require modifications to Marina Bay Drive. Construction-related traffic would be intermittent, localized (limited to defined haul routes), and temporary (limited to the construction period).</p>
Land Use	<p><i>Less than Significant Impact</i></p> <p>Alternative A would not change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under Alternative A.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative B would not change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under Alternative B.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative C would not change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under Alternative C.</p>	<p><i>Less than Significant Impact</i></p> <p>Alternative D would not change the existing land use of the CATM Complex or adjacent land uses over the foreseeable future. The land uses of areas adjacent to the CATM Complex are not expected to change in the foreseeable future. The type or amount of small arms training conducted at the CATM Complex would not change under Alternative D. Under Alternative D, the North and South Ranges would be demolished and permanently closed under the MMRP. Following closure under the MMRP, the area encompassing the former ranges may be left idle, undergo wetland/habitat restoration, or be used for some other purpose. The land use classification of this area would remain as <i>Industrial</i> through the range closure process and may change in the future, depending on the future land use of the area. The future land use of the area is unknown at this time, and would depend on the outcome of the range closure process, which may include land use controls as part of the remedial action for the former ranges.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Socioeconomics	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex at MacDill AFB would have no appreciable effect on the local economy or demographics. Direct expenditures for construction-related materials would benefit local suppliers, and secondary spending by construction workers would benefit businesses in the area such as gas stations and restaurants; however, these benefits would be temporary and have a negligible contribution to the overall local economy. Construction work would have no appreciable effect on the total labor force and employment in the region due to the low number of jobs that would be created; any increase in employment would be temporary. Operation of the new range would not involve employee hires or otherwise change the number of persons working at MacDill AFB or living in the local area. The Proposed Action would be confined within the boundary of MacDill AFB and, therefore, would have no impact on commercial uses or other public economic activity.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex at MacDill AFB would have no appreciable effect on the local economy or demographics. Direct expenditures for construction-related materials would benefit local suppliers, and secondary spending by construction workers would benefit businesses in the area such as gas stations and restaurants; however, these benefits would be temporary and have a negligible contribution to the overall local economy. Construction work would have no appreciable effect on the total labor force and employment in the region due to the low number of jobs that would be created; any increase in employment would be temporary. Operation of the new range would not involve employee hires or otherwise change the number of persons working at MacDill AFB or living in the local area. The Proposed Action would be confined within the boundary of MacDill AFB and, therefore, would have no impact on commercial uses or other public economic activity.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex at MacDill AFB would have no appreciable effect on the local economy or demographics. Direct expenditures for construction-related materials would benefit local suppliers, and secondary spending by construction workers would benefit businesses in the area such as gas stations and restaurants; however, these benefits would be temporary and have a negligible contribution to the overall local economy. Construction work would have no appreciable effect on the total labor force and employment in the region due to the low number of jobs that would be created; any increase in employment would be temporary. Operation of the new range would not involve employee hires or otherwise change the number of persons working at MacDill AFB or living in the local area. The Proposed Action would be confined within the boundary of MacDill AFB and, therefore, would have no impact on commercial uses or other public economic activity.</p>	<p><i>No Effect</i></p> <p>Reconstruction of the CATM Complex at MacDill AFB would have no appreciable effect on the local economy or demographics. Direct expenditures for construction-related materials would benefit local suppliers, and secondary spending by construction workers would benefit businesses in the area such as gas stations and restaurants; however, these benefits would be temporary and have a negligible contribution to the overall local economy. Construction work would have no appreciable effect on the total labor force and employment in the region due to the low number of jobs that would be created; any increase in employment would be temporary. Operation of the new range would not involve employee hires or otherwise change the number of persons working at MacDill AFB or living in the local area. The Proposed Action would be confined within the boundary of MacDill AFB and, therefore, would have no impact on commercial uses or other public economic activity.</p>
Public Health and Safety	<p><i>Less than Significant Impact</i></p> <p>Occupational health and safety requirements for construction would include compliance with EM 385-1-1, <i>Safety and Health Requirements</i>, which meets or exceeds OSHA standards, and obtaining an AF Form 103 dig permit prior to initiation of ground disturbing activities. The new range and site improvements proposed under Alternative A would eliminate the safety deficiencies of the existing ranges at the CATM Complex, which include poor ventilation and firing line visibility at the South Range and ponding of water on both ranges, which creates a bullet ricochet safety hazard. The SDZ of the new outdoor range under Alternative A is expected to be similar in size to the SDZ of the existing ranges, and extend over only undeveloped portions of the base and waters of Tampa Bay.</p>	<p><i>Less than Significant Impact</i></p> <p>Occupational health and safety requirements for construction would include compliance with EM 385-1-1, <i>Safety and Health Requirements</i>, which meets or exceeds OSHA standards, and obtaining an AF Form 103 dig permit prior to initiation of ground disturbing activities. The new range and site improvements proposed under Alternative A would eliminate the safety deficiencies of the existing ranges at the CATM Complex, which include poor ventilation and firing line visibility at the South Range and ponding of water on both ranges, which creates a bullet ricochet safety hazard. The SDZ of the new outdoor range under Alternative B is expected to be similar in size to the SDZ of the existing ranges, and extend over only undeveloped portions of the base and waters of Tampa Bay.</p>	<p><i>Less than Significant Impact</i></p> <p>Occupational health and safety requirements for construction would include compliance with EM 385-1-1, <i>Safety and Health Requirements</i>, which meets or exceeds OSHA standards, and obtaining an AF Form 103 dig permit prior to initiation of ground disturbing activities. The new range and site improvements proposed under Alternative A would eliminate the safety deficiencies of the existing ranges at the CATM Complex, which include poor ventilation and firing line visibility at the South Range and ponding of water on both ranges, which creates a bullet ricochet safety hazard. The SDZ of the new outdoor range under Alternative C is expected to be similar in size to the SDZ of the existing ranges, and extend over only undeveloped portions of the base and waters of Tampa Bay.</p>	<p><i>Less than Significant Impact</i></p> <p>Occupational health and safety requirements for construction would include compliance with EM 385-1-1, <i>Safety and Health Requirements</i>, which meets or exceeds OSHA standards, and obtaining an AF Form 103 dig permit prior to initiation of ground disturbing activities. The new range and site improvements proposed under Alternative A would eliminate the safety deficiencies of the existing ranges at the CATM Complex, which include poor ventilation and firing line visibility at the South Range and ponding of water on both ranges, which creates a bullet ricochet safety hazard. The SDZ of the new fully contained indoor range under Alternative D would be confined within the interior of the range.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Hazardous Materials and Wastes	<p><i>Less than Significant Impact</i></p> <p>There are no active IRP or MMRP sites within the CATM Complex, and Alternative A would not increase the potential for MCs from the CATM Complex to migrate outside the base boundary. There are no AFFF release areas within or adjacent to the CATM Complex. The DAF would conduct ACM and LBP surveys for all structures proposed to be demolished at the CATM Complex. Any encountered ACM or LBP would be remediated and disposed of in accordance with MacDill AFB's ACM and LBP management plans and in compliance with all applicable regulations prior to demolition of the structures. The construction contractor would be required to properly manage soil and control airborne levels of dust during earthwork, in coordination with the 6 CES/CEIE, and in accordance with MacDill AFB Environmental Restoration Program protocols and all applicable environmental regulations. The type or amount of small arms training that is conducted at the CATM Complex would not change under Alternative A; therefore, the types and quantities of hazardous materials used and hazardous wastes generated would be the same as under existing conditions.</p>	<p><i>Less than Significant Impact</i></p> <p>There are no active IRP or MMRP sites within the CATM Complex, and Alternative B would not increase the potential for MCs from the CATM Complex to migrate outside the base boundary. There are no AFFF release areas within or adjacent to the CATM Complex. The DAF would conduct ACM and LBP surveys for all structures proposed to be demolished at the CATM Complex. Any encountered ACM or LBP would be remediated and disposed of in accordance with MacDill AFB's ACM and LBP management plans and in compliance with all applicable regulations prior to demolition of the structures. The construction contractor would be required to properly manage soil and control airborne levels of dust during earthwork, in coordination with the 6 CES/CEIE, and in accordance with MacDill AFB Environmental Restoration Program protocols and all applicable environmental regulations. The type or amount of small arms training that is conducted at the CATM Complex would not change under Alternative B; therefore, the types and quantities of hazardous materials used and hazardous wastes generated would be the same as under existing conditions.</p>	<p><i>Less than Significant Impact</i></p> <p>There are no active IRP or MMRP sites within the CATM Complex, and Alternative C would not increase the potential for MCs from the CATM Complex to migrate outside the base boundary. There are no AFFF release areas within or adjacent to the CATM Complex. The DAF would conduct ACM and LBP surveys for all structures proposed to be demolished at the CATM Complex. Any encountered ACM or LBP would be remediated and disposed of in accordance with MacDill AFB's ACM and LBP management plans and in compliance with all applicable regulations prior to demolition of the structures. The construction contractor would be required to properly manage soil and control airborne levels of dust during earthwork, in coordination with the 6 CES/CEIE, and in accordance with MacDill AFB Environmental Restoration Program protocols and all applicable environmental regulations. The type or amount of small arms training that is conducted at the CATM Complex would not change under Alternative C; therefore, the types and quantities of hazardous materials used and hazardous wastes generated would be the same as under existing conditions.</p>	<p><i>Less than Significant Impact</i></p> <p>There are no active IRP or MMRP sites within the CATM Complex, and Alternative D would not increase the potential for MCs from the CATM Complex to migrate outside the base boundary. There are no AFFF release areas within or adjacent to the CATM Complex. The DAF would conduct ACM and LBP surveys for all structures proposed to be demolished at the CATM Complex. Any encountered ACM or LBP would be remediated and disposed of in accordance with MacDill AFB's ACM and LBP management plans and in compliance with all applicable regulations prior to demolition of the structures. The construction contractor would be required to properly manage soil and control airborne levels of dust during earthwork, in coordination with the 6 CES/CEIE, and in accordance with MacDill AFB Environmental Restoration Program protocols and all applicable environmental regulations.</p> <p>The type or amount of small arms training that is conducted at the CATM Complex would not change under Alternative D; therefore, the types and quantities of hazardous materials used and hazardous wastes generated would be the same as under existing conditions. Under Alternative D, the North and South Ranges would be demolished and permanently closed under the MMRP. Demolition of the ranges would involve removing all the existing infrastructure and earthen berms of the ranges. Closure of the CATM Complex under the MMRP would involve assessments of site contamination by lead and other metal constituents of firearm ammunition, and as-needed remediation of any contamination. The MMRP closure process would be managed by the 6 CES/CEIE and in accordance with MacDill AFB MMRP protocols and all applicable environmental regulations.</p>

Resource Area	Alternative A	Alternative B	Alternative C	Alternative D
Environmental Justice and Protection of Children	<p><i>No Effect</i></p> <p>Alternative A would not result in any adverse environmental or human health and safety risks to human populations; therefore, it would not have disproportionate environmental or human health effects on minority or low-income populations. This finding is based on the results of the analyses conducted in this EA, which indicate that Alternative A would have less than significant impacts associated with air quality, noise, human health and safety, and hazardous materials and wastes.</p> <p>Alternative A would not result in disproportionate environmental health or safety risks to children. Children are not allowed in the CATM Complex, and based on the findings of this EA, there would be no potential for the Proposed Action to expose children outside the CATM Complex to any environmental health and safety risks.</p>	<p><i>No Effect</i></p> <p>Alternative B would not result in any adverse environmental or human health and safety risks to human populations; therefore, it would not have disproportionate environmental or human health effects on minority or low-income populations. This finding is based on the results of the analyses conducted in this EA, which indicate that Alternative B would have less than significant impacts associated with air quality, noise, human health and safety, and hazardous materials and wastes.</p> <p>Alternative B would not result in disproportionate environmental health or safety risks to children. Children are not allowed in the CATM Complex, and based on the findings of this EA, there would be no potential for the Proposed Action to expose children outside the CATM Complex to any environmental health and safety risks.</p>	<p><i>No Effect</i></p> <p>Alternative C would not result in any adverse environmental or human health and safety risks to human populations; therefore, it would not have disproportionate environmental or human health effects on minority or low-income populations. This finding is based on the results of the analyses conducted in this EA, which indicate that Alternative C would have less than significant impacts associated with air quality, noise, human health and safety, and hazardous materials and wastes.</p> <p>Alternative C would not result in disproportionate environmental health or safety risks to children. Children are not allowed in the CATM Complex, and based on the findings of this EA, there would be no potential for the Proposed Action to expose children outside the CATM Complex to any environmental health and safety risks.</p>	<p><i>No Effect</i></p> <p>Alternative D would not result in any adverse environmental or human health and safety risks to human populations; therefore, it would not have disproportionate environmental or human health effects on minority or low-income populations. This finding is based on the results of the analyses conducted in this EA, which indicate that Alternative D would have less than significant impacts associated with air quality, noise, human health and safety, and hazardous materials and wastes.</p> <p>Alternative D would not result in disproportionate environmental health or safety risks to children. Children are not allowed in the CATM Complex, and based on the findings of this EA, there would be no potential for the Proposed Action to expose children outside the CATM Complex to any environmental health and safety risks.</p>

4. Summary of Environmental Management and Mitigations

The following management actions and mitigations focus on avoidance and minimization of impacts to the resources analyzed in this EA. These measures must be applied by the alternatives that are implemented to comply with the commitments the DAF has made regarding the Proposed Action and to not exceed the levels of impact determined for the resources analyzed in this EA.

4.1 Air Quality

During reconstruction of the CATM Complex, fugitive dust would be controlled at the site by measures that include, but are not limited to, the following:

- Minimizing surface disturbance and construction traffic to the extent practicable
- Watering exposed surfaces
- Stabilizing exposed soils by seeding or mulching
- Applying gravel or other stabilizing material to dirt roads
- Enclosing or covering stockpiled material
- Covering open-top haul trucks during transit

4.2 Water Resources

A federal CWA Section 404 permit from USACE, a state ERP from SWFWMD, and authorization from the Hillsborough County EPC would be required for the wetland impacts that would result from the implementation of Alternatives B, C, or D. Estimates of wetland impacts and associated wetland mitigation for these alternatives are provided in the EA. If any of these alternatives are selected for implementation, the wetland impacts and mitigation would need to be reassessed as part of the permitting process. Compensatory wetland mitigation to offset unavoidable wetland impacts under these alternatives would be provided by purchasing the required type and amount of wetland mitigation credits from the MPMB.

Each alternative would require an ERP from SWFWMD for stormwater drainage modifications that would be made at the site. The site drainage system would be required to meet all ERP design criteria for stormwater conveyance and discharge based on the impervious area that would be created and stormwater features proposed.

Reconstruction of the CATM Complex would disturb more than 1 acre of land and, therefore, would require a DEP NPDES stormwater construction permit. As part of this permit, the DAF would be required to prepare and implement an associated SWPPP, which would outline the BMPs and engineering controls to be used to prevent and minimize indirect erosion, sedimentation, and pollution during construction. Potential BMPs and engineering controls for each alternative include, but are not limited to, the following:

- Installing silt fence along the perimeter and downstream portions of the construction area to trap sediment in stormwater runoff
- Installing silt fence around construction laydown areas and ensuring that staged equipment and materials are properly stored and handled to prevent any indirect impacts to soils and water resources
- Protecting onsite and offsite wetlands/waters with a double row of silt fence
- Controlling potential concentrated flows with diversion berms that would divert drainage into spreader swales and check dams to reduce flow velocity and dissipate flow volumes
- Stabilizing exposed soils in the construction area by seeding or mulching

- Using erosion control blankets or matting on steep slopes to prevent erosion
- Preventing release of construction materials that could contaminate wetlands/waters such as POL onto exposed soils
- Ensuring that all construction workers are aware of the location of the nearest wetlands/waters and the associated protection measures required to be implemented. The final suite of measures that would be implemented would be based on site conditions and the specific requirements identified in the ERP and final SWPPP.

4.3 Cultural Resources

If artifacts, concentrations of shell, or unique soil conditions were discovered during construction, all construction activity in the vicinity of the discovery would cease until the MacDill AFB Cultural Resources Manager assessed the situation in consultation with the SHPO. In the event that the inadvertent find was human remains, all work in the immediate vicinity of the discovery would be halted and the remains would be protected until the resources were identified and evaluated and an appropriate mitigation strategy was developed in consultation with SHPO and tribal representatives as appropriate, relevant to Chapter 872, *Florida Statutes*, and the Native American Graves Protection and Repatriation Act (25 USC Sections 3001–3013).

4.4 Biological Resources

Any bird nests found during construction would be avoided to the extent practicable. In the event that a bird nest was found within or adjacent to the construction site, the construction contractor would be required to immediately stop work and consult with the MacDill Natural Resources Office on the protection of the nest before resuming construction activities. To further minimize potential construction impacts on migratory birds, the USFWS official species list for the Proposed Action would be reviewed to identify when certain bird species protected under the MBTA are most likely to be present and breeding in the project area.

The osprey nest located on a light pole within the interior of the North Range would be removed under the Proposed Action. The nest would be removed by the MacDill Natural Resources Office in coordination with FWC only when it is inactive.

BMPs and engineering controls would be implemented during construction to prevent any indirect erosion, sedimentation, and pollution impacts to wetlands and other surface waters. This would minimize potential impacts on habitat potentially used by the wood stork, eastern black rail, and rufa red knot. Potential BMPs and engineering controls are identified in Section 4.2.

To minimize potential impacts to the tricolored bat, no trees would be removed from May through July.

USFWS's *Standard Protection Measures for the Eastern Indigo Snake* (USFWS 2013) would be implemented during construction to minimize the potential for unintentional impacts to the eastern indigo snake.

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6. List of Preparers

Name	EA Role	Education and Experience
Tunch Orsoy	Project Manager/Author	M.S., Marine Science Years of Experience: 30
Nicole Bentivegna	Water Resources, Land Use, Hazardous Materials and Wastes	M.S., Environmental Science Years of Experience: 13
Caitlin Santinelli	Air Quality	B.S., Earth and Atmospheric Science Years of Experience: 13
Mitch Lindsay	Noise, Senior Technical Review	M.S., Civil Engineering Years of Experience: 38
Eduardo Rendon	GIS and Graphics	M.S., Environmental Planning and Design Years of Experience: 17
Matt Sluder	Editor	B.A., English Years of Experience: 9
Katie Schwartz	Section 508 Compliance	B.A., History Years of Experience: 9

Appendix A

Intergovernmental and Interagency Consultation



FLORIDA DEPARTMENT of STATE

RON DESANTIS

Governor

CORD BYRD

Secretary of State

Mr. Andrew W. Rider
Acting Chief, Installation Management Flight
6 CES/CEI
7621 Hillsborough Loop Drive
MacDill Air Force Base, Florida 33621-5407

February 29, 2024

Re: DHR Project File No.: 2024-775
Reconstruction of Small Arms Firing Range
MacDill Air Force Base, Hillsborough County

Dear Mr. Rider:

The Florida State Historic Preservation Officer reviewed the referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places*. The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties*.

Based on the information provided and the conditions outlined in your letter concerning fortuitous finds or unexpected archaeological discoveries, it is the finding of this office that no historic properties will be affected by the proposed undertakings.

If you have any questions, please contact Scott Edwards, Historic Preservationist, by electronic mail

Sincerely,

Alissa Slade Lotane
Director, Division of Historical Resources
and State Historic Preservation Officer



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

**MEMORANDUM FOR DIVISION OF HISTORIC RESOURCES
MR. SCOTT EDWARDS
R.A. GRAY BUILDING
500 SOUTH BRONOUGH STREET
TALLAHASSEE FL 32399**

**FROM: 6 CES/CEI
7621 Hillsborough Loop Drive
MacDill AFB 33621-5207**

SUBJECT: Reconstruction of Small Arms Firing Range at MacDill AFB

1. The Department of the Air Force proposes to reconstruct the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base.

2. In accordance with the National Environmental Policy Act and Code of Federal Regulations, Title 32, Part 989, "Environmental Impact Analysis Process", the Department of the Air Force is preparing an Environmental Assessment (EA) to analyze the potential environmental impacts associated with reconstructing the CATM Complex at MacDill AFB. Four alternatives for reconstructing the CATM Complex, which include Alternatives A, B, C, and D, are being evaluated in the EA along with the No Action Alternative of not reconstructing the CATM Complex.

3. Under Alternative A, the preferred alternative, the North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range. Under Alternative B, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 35 lanes would be constructed within the footprint of the North Range and adjacent field. Under Alternative C, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 21 lanes and a new 100-meter (328-foot) NCI range with 14 lanes would be constructed within the footprint of the North Range and adjacent field. Lastly, under Alternative D, the North and South Ranges would be demolished and permanently closed, and a new 100-meter (328-foot) indoor small arms firing range with 35 lanes would be constructed on the southern side of the existing CATM classroom training facility. Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner.

CHARGE THE STORM...LET'S GO!

4. The area that encompasses the alternatives being evaluated was surveyed during Phase I archaeological surveys conducted in 2017 and 2019. Based on these surveys, there are no known archaeological sites within or adjacent to project area of any alternative. Figure 3 shows the locations of the nearest known archaeological sites relative to the combined project areas of the alternatives. The nearest archaeological sites are Site 8HI14529 which is 209 feet to the south, Site 8HI14512 which is 624 feet to the southeast, and Site 8HI13708 which is 902 feet to the northwest. All of these sites have been determined ineligible for listing in the National Register of Historic Places. Based on the locations of these sites, there would be no potential for any of them to be impacted by the reconstruction of the CATM Complex. If artifacts, concentrations of shell, or unique soil conditions are discovered during construction, all construction activity in the vicinity of the discovery will cease until the MacDill AFB Cultural Resources Manager has assessed the situation in consultation with the Florida Division of Historic Resources.

5. The ranges proposed to be reconstructed are not historic structures and they are not located near any historic buildings or either of MacDill AFB's historic districts. Therefore, no impacts to architectural resources are expected to result from reconstruction of the CATM Complex.

6. The Department of the Air Force has determined that this project would have no adverse effect on cultural or historic resources under Section 106 of the National Historic Preservation Act. We request the Florida Division of Historic Resources' input on the project and concurrence with MacDill AFB's determination of no effect. If the Florida Division of Historic Resources has any questions or requires additional information, please contact the undersigned at 813-828-4241 or Mr. Jason Kirkpatrick at 813-828-0459.

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ANDREW W. RIDER, P.E., GS-13, DAF
Acting Chief, Installation Management Flight

3 Attachments:

1. Figure 1 – Project Location
2. Figure 2 – Existing Conditions at CATM Complex
3. Figure 3 – Nearest Archaeological Sites



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

April 15, 2024

Colonel Adam D. Bingham
Commander, 6th Air Refueling Wing
8208 Hangar Loop Drive, Suite 1
MacDill Air Force Base, FL 33621-5407

Mr. Lewis Johnson
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Mr. Johnson

The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act for the proposed reconstruction of the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base.

Four alternatives for reconstructing the CATM Complex, which include Alternatives A, B, C, and D, are being evaluated in the EA along with the No Action Alternative of not reconstructing the CATM Complex. Under Alternative A, the preferred alternative, the North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range. Under Alternative B, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 35 lanes would be constructed within the footprint of the North Range and adjacent field. Under Alternative C, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 21 lanes and a new 100-meter (328-foot) NCI range with 14 lanes would be constructed within the footprint of the North Range and adjacent field. Lastly, under Alternative D, the North and South Ranges would be demolished and permanently closed, and a new 100-meter (328-foot) indoor small arms firing range with 35 lanes would be constructed on the southern side of the existing CATM classroom training facility. Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner.

In accordance with Executive Order 13175, "Consultation with Indian Tribal Governments", the DAF would like to initiate government-to-government consultation on this proposed project. DAF desires to discuss this proposed project in detail with you so we may understand and consider any comments, concerns, or suggestions you may have. This letter also initiates our consultation under Section 106 of the National Historic Preservation Act and Code of Federal Regulations, Title 36, Part 800, and requests your input.

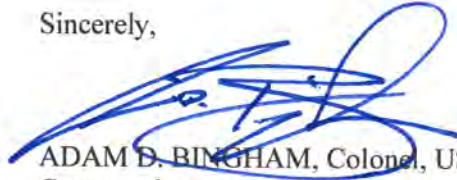
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8HI14512 which is 624 feet to the southeast, and Site 8HI13708 which is 902 feet to the northwest. All of these sites have been determined ineligible for listing in the National Register of Historic Places. Based on the locations of these sites, there would be no potential for any of them to be impacted by the reconstruction of the CATM Complex. If artifacts, concentrations of shell, or unique soil conditions are discovered during construction, all construction activity in the vicinity of the discovery will cease until the MacDill AFB Cultural Resources Manager has assessed the situation in consultation with the Florida Division of Historic Resources.

Please let us know when you would be available to discuss this proposed project and your expectations on how to proceed with consultation. Feel free to contact me at (813) 828-4444 to discuss dates and times for consultation.

Sincerely,



ADAM D. BINGHAM, Colonel, USAF
Commander

Attachment

1. Figures 1 through 3



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

April 15, 2024

Colonel Adam D. Bingham
Commander, 6th Air Refueling Wing
8208 Hangar Loop Drive, Suite 1
MacDill Air Force Base, FL 33621-5407

Mr. Talbert Cypress
Miccosukee Tribe of Indians of Florida
Tamiami Station
PO Box 440021
Miami, FL 33144

Dear Mr. Cypress,

The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act for the proposed reconstruction of the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base.

Four alternatives for reconstructing the CATM Complex, which include Alternatives A, B, C, and D, are being evaluated in the EA along with the No Action Alternative of not reconstructing the CATM Complex. Under Alternative A, the preferred alternative, the North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range. Under Alternative B, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 35 lanes would be constructed within the footprint of the North Range and adjacent field. Under Alternative C, the North and South Ranges would be demolished, and a new 300-meter (984-foot) NCI range with 21 lanes and a new 100-meter (328-foot) NCI range with 14 lanes would be constructed within the footprint of the North Range and adjacent field. Lastly, under Alternative D, the North and South Ranges would be demolished and permanently closed, and a new 100-meter (328-foot) indoor small arms firing range with 35 lanes would be constructed on the southern side of the existing CATM classroom training facility. Under the No Action Alternative, the CATM Complex at MacDill AFB would not be reconstructed or improved in any manner.

In accordance with Executive Order 13175, "Consultation with Indian Tribal Governments", the DAF would like to initiate government-to-government consultation on this proposed project. DAF desires to discuss this proposed project in detail with you so we may understand and consider any comments, concerns, or suggestions you may have. This letter also initiates our consultation under Section 106 of the National Historic Preservation Act and Code of Federal Regulations, Title 36, Part 800, and requests your input.

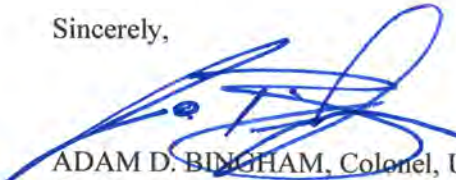
The area that encompasses the alternatives being evaluated was surveyed during Phase I archaeological surveys conducted in 2017 and 2019. Based on these surveys, there are no known archaeological sites within or immediately adjacent to the project area of any alternative. Figure 3 shows

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the locations of the nearest known archaeological sites relative to the combined project areas of the alternatives. The nearest archaeological sites are Site 8HI14529 which is 209 feet to the south, Site 8HI14512 which is 624 feet to the southeast, and Site 8HI13708 which is 902 feet to the northwest. All of these sites have been determined ineligible for listing in the National Register of Historic Places. Based on the locations of these sites, there would be no potential for any of them to be impacted by the reconstruction of the CATM Complex. If artifacts, concentrations of shell, or unique soil conditions are discovered during construction, all construction activity in the vicinity of the discovery will cease until the MacDill AFB Cultural Resources Manager has assessed the situation in consultation with the Florida Division of Historic Resources.

Please let us know when you would be available to discuss this proposed project and your expectations on how to proceed with consultation. Feel free to contact me at (813) 828-4444 to discuss dates and times for consultation.

Sincerely,



ADAM D. BINGHAM, Colonel, USAF
Commander

Attachment

1. Figures 1 through 3



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

April 15, 2024

Colonel Adam D. Bingham
Commander, 6th Air Refueling Wing
8208 Hangar Loop Drive, Suite 1
MacDill Air Force Base, FL 33621-5407

Mr. David Hill
Muscogee (Creek) Nation
P.O. Box 580
Okmulgee, OK 74447

Dear Mr. Hill,

The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act for the proposed reconstruction of the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base.

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In accordance with Executive Order 13175, "Consultation with Indian Tribal Governments", the DAF would like to initiate government-to-government consultation on this proposed project. DAF desires to discuss this proposed project in detail with you so we may understand and consider any comments, concerns, or suggestions you may have. This letter also initiates our consultation under Section 106 of the National Historic Preservation Act and Code of Federal Regulations, Title 36, Part 800, and requests your input.

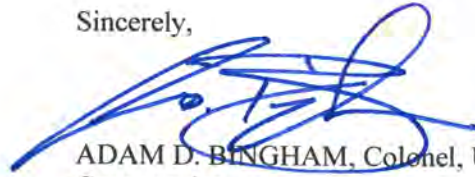
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Sincerely,



ADAM D. BINGHAM, Colonel, USAF
Commander

Attachment

1. Figures 1 through 3



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

April 15, 2024

Colonel Adam D. Bingham
Commander, 6th Air Refueling Wing
8208 Hangar Loop Drive, Suite 1
MacDill Air Force Base, FL 33621-5407

Mr. Marcellus W. Osceola Jr.
Seminole Tribe of Florida
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Dear Mr. Osceola,

The Department of the Air Force (DAF) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act for the proposed reconstruction of the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the Base.

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In accordance with Executive Order 13175, "Consultation with Indian Tribal Governments", the DAF would like to initiate government-to-government consultation on this proposed project. DAF desires to discuss this proposed project in detail with you so we may understand and consider any comments, concerns, or suggestions you may have. This letter also initiates our consultation under Section 106 of the National Historic Preservation Act and Code of Federal Regulations, Title 36, Part 800, and requests your input.

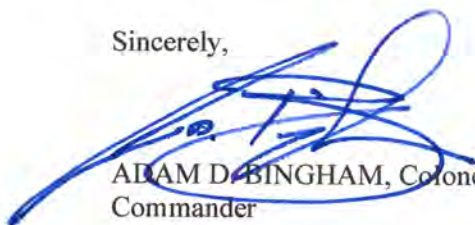
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Please let us know when you would be available to discuss this proposed project and your expectations on how to proceed with consultation. Feel free to contact me at (813) 828-4444 to discuss dates and times for consultation.

Sincerely,



ADAM D. BINGHAM, Colonel, USAF
Commander

Attachment

1. Figures 1 through 3



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office



April 12, 2024

Andrew Rider
Environmental Element Chief
6 CES/CEIE
7621 Hillsborough Loop Drive
MacDill AFB, FL 33621-5207

Current Service Consultation Code: 2024-0042727

Prior Service Consultation Code: N/A

Project: Reconstruction of Small
Arms Firing Range at
MacDill AFB, FL
County: Hillsborough County

Dear Mr. Rider:

The U.S. Fish and Wildlife Service (Service) has reviewed the Department of the Air Force (DAF) request to initiate consultation dated February 14, 2024, for the Reconstruction of the Small Arms Firing Range at MacDill Air Force Base (Project). The DAF determined that the proposed Project may affect, but is not likely to adversely affect the federally threatened wood stork (*Mycteria americana*), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), rufa red knot (*Calidris canutus rufa*), and proposed endangered tricolored bat (*Perimyotis subflavus*). This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

The Action Agency, the Department of the Air Force (DAF), proposes to reconstruct the Combat Arms Training and Maintenance (CATM) Complex. The DAF will demolish the northern Non-Contained Impact (NCI) range (North Range) and partially demolish and rebuild the southern Outdoor Partially Contained Baffled range (South Range). In the 2-acre North Range, the firing range infrastructure will be removed but the 35 ft. high berms will remain and be cleared, grubbed, and sodded. In the South Range, the walls, baffles, and bullet catch system will be removed and converted to an NCI range within the same 1.5-acre footprint. The South Range's 20 ft. high and ~40 ft. wide back berm and 15 ft. high and 25 ft. wide side berms will be cleared, grubbed, recontoured, and sodded. Shrubs and approximately 25 trees will be removed from the berms during clearing. Bullets fired by trainees in the reconstructed range will be mostly frangible, splitting on impact to minimize ricochet. Firing will be confined to the range and bullets will not overshoot the berms into the surrounding habitat. Construction will be limited to the range footprints and nearby estuarine intertidal wetlands will not be modified.

The DAF determined the following federally listed species under Service jurisdiction have the potential to be affected by construction of the proposed facility: wood stork (*Mycteria americana*), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), and rufa red knot

(*Calidris canutus rufa*). The DAF also acknowledges potential impacts to the tricolored bat (*Perimyotis subflavus*), currently proposed for listing. The proposed activities would not occur within critical habitat for any federally listed species.

THREATENED AND ENDANGERED SPECIES

Wood stork

As outlined in correspondence from the DAF, construction of the proposed Project may cause minor behavioral responses in foraging wood storks using nearby mangroves, marsh, tidal creeks, and drainage ditches. The DAF has assessed that the effects of noise or visual disturbance from construction or operational activities on this species would be minimal because the ranges are already used regularly for small arms training and storks using this area are likely habituated to loud sounds. Additionally, storks can readily fly to higher quality habitats nearby if disturbed. The species does not have any nesting colonies on the installation. The proposed work does not involve direct disturbance or modification of the estuarine intertidal wetlands or drainage ditches the species uses for foraging, however, the project would result in land disturbance that creates the potential for sediment or pollutant runoff into surrounding waterways. The DAF has committed to applying Best Management Practices to deal with potential runoff, including the use of silt fencing along the project perimeter, diversion dams for drainage, erosion control matting, and contractor education to minimize impacts. Based on the minimization measures proposed, the Service concurs with the DAF's determination that the project may affect but is not likely to adversely affect the wood stork.

Eastern black rail

The eastern black rail uses some similar habitats as the wood stork and could be similarly affected by the Project. However, eastern black rails have not yet been detected on the installation. Call-playback surveys conducted in 2023 and Acoustic Recording Unit surveys in 2022 yielded no detections of the species. Based on the minimization measures already mentioned, the Service concurs with the DAF's determination that the project may affect but is not likely to adversely affect the eastern black rail.

Rufa red knot

Rufa red knots could also use nearby estuarine intertidal wetlands, although in Tampa Bay, Florida they are more likely to occur at the sandy beaches on Gulf of Mexico barrier islands and on the estuarine coastline. They are sighted nearly every year on MacDill AFB, but these sightings have occurred at the created beach and in intertidal mudflats at least 1,890 ft. from the Action Area. If red knots use the area around the Project, they would likely experience similar behavioral responses as the wood stork and eastern black rail. Based on the minimization measures proposed, the Service concurs with the DAF's determination that the project may affect but is not likely to adversely affect the rufa red knot.

PROPOSED SPECIES

Tricolored bat


Although the Service does not consult on candidate, proposed, or state-listed species, the Service appreciates the DAF's efforts to consider potential impacts to the tricolored bat. According to the DAF, tricolored bats have been detected within the past year on MacDill AFB and may possibly roost on the installation. The site of the Project is previously developed with approximately 25 trees, but this area is not heavily wooded, unlike other areas on the installation. However, tricolored bats could use any tree that provides clumps of leaves, Spanish moss, palm fronds, or pine needles for roosting. The DAF has pledged to not remove any trees from May to July during the maternity season when pups are unable to move. Tricolored bats forage on the installation, however, construction work will not occur at night when bats are active. Based on the minimization measures proposed, the Service concurs with the DAF's determination that the project may affect but is not likely to adversely affect the tricolored bat.

This letter fulfills the requirements of section 7 of the Act and further action is not required. If modifications are made to the Project that may affect the listed species or habitat in a way not previously considered, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

If you have any questions regarding this response, please contact Ms. Sinead Borchert by e-mail at [REDACTED]

Sincerely,
**ROBERT
ALDREDGE**

Robert A. Aldredge, Ph.D.
Florida Air Force Partnership Coordinator
Florida Ecological Services Field Office

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ALDREDGE
Date: 2024.04.15 14:32:51 -04'00'

From: [KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE](#)
To: FW4FLESregs@fws.gov
Cc: [BORCHERT, SINEAD M CIV USAF AMC 6 CES/CEIE](#); [Whitworth, Sophie](#); [RIDER, ANDREW W CIV USAF AMC 6 CES/CEI](#); [Orsoy, Tunch](#); [Bentivegna, Nicole](#)
Subject: [EXTERNAL] Project Code 2024-0042727 - Sect 7 Consult for CATM Repair MacDill AFB
Date: Friday, February 16, 2024 1:33:59 PM
Attachments: [MacDill to USFWS Ltr CATM EA v2 FINAL 16Feb24.pdf](#)
[Figures 1 through 3 USFWS Letter v2.pdf](#)

Good afternoon USFWS;

MacDill AFB is making plans to repair or replace our existing small arms firing range (known as the Combat Arms Training and Maintenance facility or CATM). We are preparing an Environmental Assessment for the action and require USFWS consultation on the potential for impacts to federally listed species in accordance with Section 7 of the Endangered Species Act.

Our Section 7 consultation letter and figures for this action are attached.

For awareness, I did create a project in ipac and it generated the following USFWS project code:
2024-0042727

We look forward to hearing back from you so that we can continue completion of the NEPA process for this action.

Thank you and please let me know if you have any questions.

JasonK

JASON W. KIRKPATRICK, Contractor, Akima Support Operations, LLC
Environmental Element Manager
6th Civil Engineer Squadron
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621

Comm 813-828-0459
DSN 968-0459



**DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA**

14-Feb-2024

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE (USFWS)
MR. ROBERT ALDREDGE
7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FL 32256

FROM: 6 CES/CEI
7621 HILLSBOROUGH LOOP DRIVE
MACDILL AFB, FL 33621-5207

SUBJECT: Reconstruction of Small Arms Firing Range at MacDill AFB, FL; USFWS Project
Code: 2024-0042727

1. The Department of the Air Force (DAF) proposes to reconstruct the small arms firing ranges at MacDill Air Force Base (AFB) referred to as the Combat Arms Training and Maintenance (CATM) Complex. The CATM Complex is in the southeastern portion of MacDill AFB and comprises two sub-areas: a Non-Contained Impact (NCI) range, referred to as the North Range, and an Outdoor Partially Contained Baffled (OPCB) range, referred to as the South Range (Figures 1 and 2). Due to design, operational, and safety deficiencies, these ranges are proposed to be reconstructed to improve their ability to support CATM training and other small arms training conducted at the base.

2. In accordance with the National Environmental Policy Act and Code of Federal Regulations, Title 32, Part 989, "Environmental Impact Analysis Process", the DAF is preparing an Environmental Assessment (EA) to analyze the potential environmental impacts associated with reconstructing the CATM Complex at MacDill AFB. Under the Proposed Action analyzed in the EA, the North Range would be demolished, and the South Range would be partially demolished and rebuilt as a 50-meter (164-foot) NCI range (Figure 3), which would be an unenclosed outdoor range consisting of a firing line, earthen impact berm, and earthen side berms. The distance from the firing line to the impact berm would be 50 meters or 164 feet. The South Range was originally constructed as an outdoor NCI range in 1982 and included the existing earthen impact berm to the west and earthen side berms to the north and south. The South Range was converted to an OPCB range in 1998 when side walls, overhead baffles, and a bullet catchment system (trap) were added; the surrounding berms were retained but were not needed for the OPCB range. Under the Proposed Action, the side walls, baffles, and bullet trap would be removed and the surrounding berms would be upgraded to convert the South Range back to an outdoor NCI range.

3. Approximately 5,800 personnel receive CATM training annually at the CATM Complex. Approximately 75 percent of the expended rounds are 5.56-millimeter (mm) rounds shot from rifles and 25 percent of the rounds are 9-mm handgun rounds. The North Range, including the surrounding berms, is approximately 2.1 acres and consists of a firing line with 25 lanes, an earthen

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impact berm, and earthen side berms. The earthen impact berm of the North Range is approximately 35 feet high and 65 feet wide at the base. The northern and southern side berms of the range are both approximately 15 feet high and 25 feet wide at the base. The South Range, including the surrounding berms, is approximately 1.5 acres and consists of a firing line with 28 lanes, concrete side walls, wooden overhead baffles, and a bullet trap. The berm on the western side of the range, behind the bullet trap, is approximately 20 feet high and has a base width that varies from 30 to 40 feet. This berm was the impact berm of the original NCI range. The berms on the northern and southern sides of the range are both approximately 15 feet high and 25 feet wide at the base. The existing berms of the South Range would be upgraded and used as the berms for the new NCI range. The existing berms would be cleared and grubbed of all trees and shrubs, reshaped and/or built up to meet the requirements of the new range, and then sodded.

4. Most of the bullets that would be fired on the new NCI range would be frangible. Frangible bullets are designed to disintegrate into small particles on impact to minimize penetration and ricochet. Nonfrangible bullets do not disintegrate on impact. All bullets fired on the new range would be directed at targets placed on the ground surface between the firing line and impact berm. All fired bullets would be contained within the range interior by the upgraded impact berm and side berms. Range safety regulations require that all firing is level to the ground and in a straight direction toward a target down range. Firing upward, downward, or at any angle on the range is strictly prohibited and would result in the immediate removal of the user from the range. During CATM training, these and other safety measures are taught during classroom training and are strictly enforced by instructors during training on the range. Based on these safety measures and the heights of the impact berm and side berms, there is virtually no potential for any bullet fired on the range to overshoot the impact berm or side berms of the range. There are no known incidents of any fired bullet overshooting the berms of the North Range or South Range.

5. Estuarine intertidal wetlands exist to the north, west, and south of the CATM Complex (Figure 2) and primarily include mangrove forests, shrub wetlands, tidal creeks, and drainage ditches. Portions of these wetlands are potentially suitable habitat for the wood stork (*Mycteria americana*), eastern black rail (*Laterallus jamaicensis jamaicensis*), and rufa red knot (*Calidris canutus rufa*). MacDill AFB is within core foraging areas for offbase wood stork colonies and wood storks regularly occur around wetlands and water bodies on the base. The eastern black rail has not been sighted on MacDill AFB. Call-playback surveys for the species were conducted in suitable habitat at the base in March 2021 and May 2022. The rufa red knot is known to occur on MacDill AFB during winter. The nearest areas where individuals or groups of red knots have been sighted are approximately 1,890 feet to the south and 2,100 feet to the southeast of the CATM Complex. Reconstruction of the CATM Complex under the Proposed Action would be confined within the existing berms of the ranges and there would be no disturbance to any wetlands or waters outside the berms. Engineering controls and best management practices (BMPs) would be implemented during construction to prevent any indirect erosion, sedimentation, and pollution impacts to wetlands and waters outside the project area. Potential engineering controls and BMPs include, but are not limited to, installing silt fence along the perimeter and downstream portions of the construction area to trap sediment in stormwater runoff; protecting the nearest wetlands with a double row of silt fence; controlling potential concentrated flows with diversion berms that would divert drainage into spreader swales and check dams to reduce flow velocity and dissipate flow volumes; stabilizing exposed soils in the construction area by seeding or mulching; using erosion

control blankets or matting on steep slopes to prevent erosion; preventing release of construction materials that could contaminate nearby wetlands onto exposed soils; and ensuring that all construction workers are aware of the location of the nearest wetlands and the associated protection measures required to be implemented. The final suite of measures that would be implemented would be identified in the Environmental Resource Permit and final Stormwater Pollution Prevention Plan for the project. For these reasons, the Proposed Action would not result in loss or degradation of wood stork, eastern black rail, or red knot habitat. Noise generated during construction activities may temporarily disturb wood storks, black rails, or red knots that potentially occur near the site; however, any disturbance would be limited to the construction period and is expected to be negligible. Small arms training at the CATM Complex is a regular source of noise and potential disturbance to wildlife in the surrounding area. Reconstruction of the CATM Complex would not change the type or amount of small arms training conducted and, therefore, would not increase the levels of firearm noise in the area relative to existing conditions. Lastly, there would be no physical impacts to these bird species from construction or operation of the new NCI range. Based on the strictly enforced range safety measures and the heights of the berms of the proposed NCI range, there is negligible potential for any bullet fired on the range to overshoot the impact berm or side berms and potentially harm the wood stork, black rail, or red knot, or the federally threatened Florida manatee (*Trichechus manatus latirostris*), which is known to occur in the larger tidal creeks farther from the project area.

6. The tricolored bat (*Perimyotis subflavus*) has been documented on MacDill AFB and is proposed to be listed as endangered under the Endangered Species Act. Outside of winter, tricolored bats often occur in forested habitats where they roost among the leaves, Spanish moss, palm fronds, and pine needles of live and recently dead trees. Removal of trees, particularly dense forest habitat, should be avoided outside winter, especially during the maternity season from May through July when pups are unable to move and should not be disturbed. Reconstruction of the CATM Complex would not involve the clearing of forest habitat; however, approximately 25 trees that have grown on the berms of the ranges would be removed. To minimize potential impacts to the tricolored bat, no trees would be removed from May through July under the Proposed Action.

7. The CATM Complex provides suboptimal habitat for the eastern indigo snake (*Drymarchon couperi*) because it is developed and regularly used for small arms training. The nearest gopher tortoise (*Gopherus polyphemus*) burrows that could be used for shelter by the indigo snake are located approximately 4,130 feet to the north of the CATM Complex. No eastern indigo snakes have been observed at MacDill AFB during protected species surveys. There was an unverified sighting of an indigo snake at MacDill AFB about 20 years ago but it was never confirmed. As a precautionary measure, USFWS' *Standard Protection Measures for the Eastern Indigo Snake* would be implemented during construction to minimize the potential for unintentional impacts to the eastern indigo snake.

8. The CATM Complex and adjacent areas do not provide suitable habitat for the piping plover (*Charadrius melodus*). The nearest areas where this federally listed shorebird has been documented to occur are approximately 1,890 feet to the south and 2,100 feet to the southeast of the CATM Complex.

9. There are two active bald eagle (*Haliaeetus leucocephalus*) nests on MacDill AFB. The nearest active nest to the CATM Complex is located approximately 4,200 feet to the northwest. Construction associated with the Proposed Action would be well outside the 660-foot buffer of each eagle nest on the base, as recommended in USFWS' *National Bald Eagle Management Guidelines*.

10. Based on the above information, and in compliance with Section 7(a)(2) of the Endangered Species Act, the DAF has determined that the proposed reconstruction of the CATM Complex at MacDill AFB may affect but is not likely to adversely affect the wood stork, eastern black rail, rufa red knot, and tricolored bat. The DAF requests concurrence from the USFWS on these effect determinations. The DAF has determined that the Proposed Action would have no effect on any other federally listed species.

11. If you have any questions or require additional information on the Proposed Action, please contact Jason Kirkpatrick, 6 CES/CEIE, at (813) 828-0459.

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ANDREW W. RIDER, P.E., GS-13, DAF
Acting Chief, Installation Management Flight

3 Attachments:

1. Figure 1 – Project Location
2. Figure 2 – Existing Conditions at CATM Complex
3. Figure 3 – Proposed Reconstruction of CATM Complex

Figure 1. Project Location



Figure 2. Existing Conditions at CATM Complex and Wetlands Identified by National Wetlands Inventory

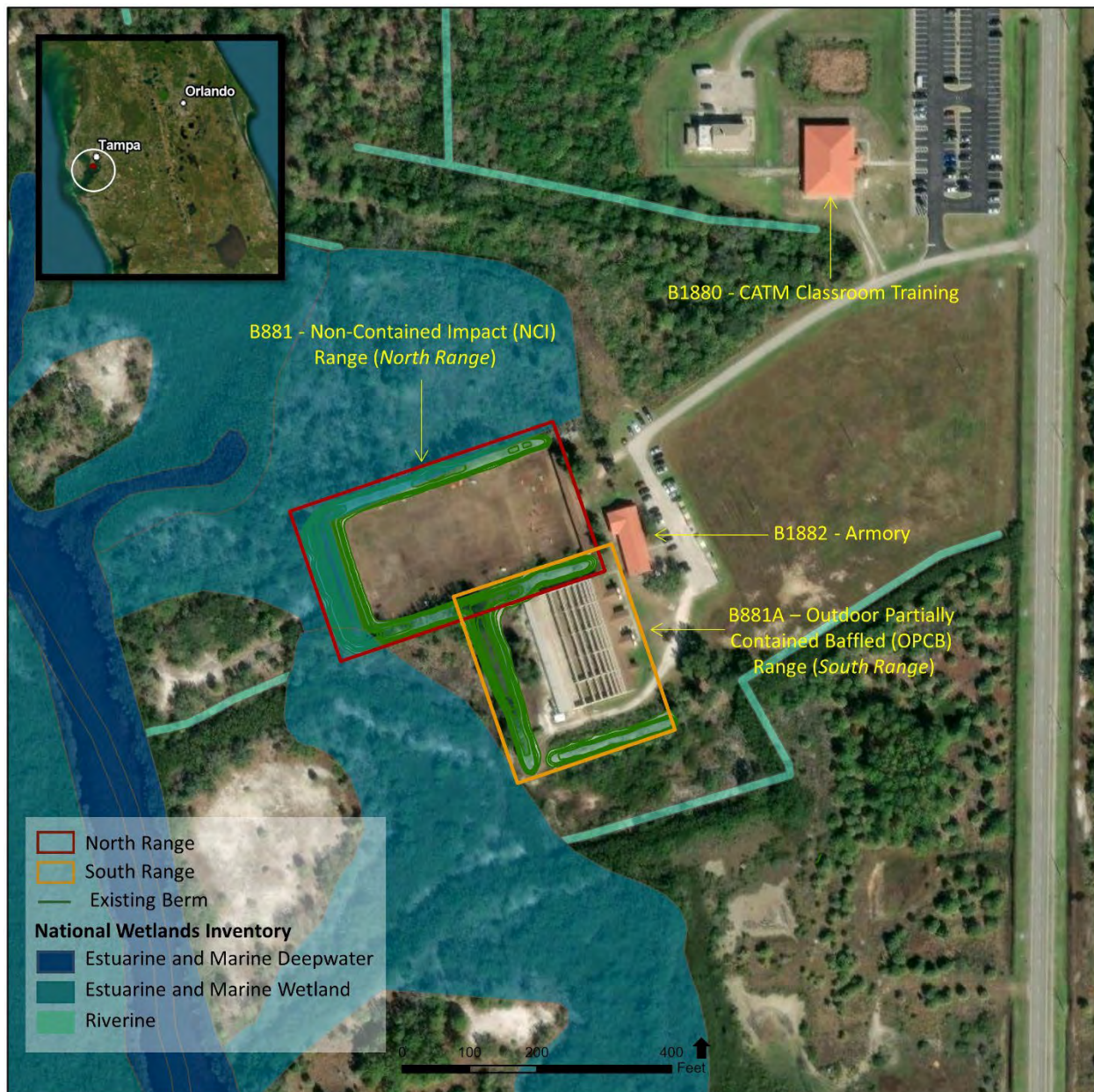


Figure 3. Proposed Reconstruction of CATM Complex



Appendix B

Public Participation

Tampa Bay Times
Published Daily

STATE OF FLORIDA

COUNTY OF Pinellas, Hillsborough, Pasco,
Hernando Citrus

Before the undersigned authority personally appeared **Jean Mitotes** who on oath says that he/she is **Legal Advertising Representative of the Tampa Bay Times** a daily newspaper printed in St. Petersburg, in Pinellas County, Florida; that the attached copy of advertisement, being a Legal Notice in the matter **RE: Wetlands and Floodplains** was published in said newspaper by print in the issues of: **12/27/23** or by publication on the newspaper's website, if authorized, on

Affiant further says the said **Tampa Bay Times** is a newspaper published in **Pinellas, Hillsborough, Pasco, Hernando** **Citrus** County, Florida and that the said newspaper has heretofore been continuously published in said **Pinellas, Hillsborough, Pasco, Hernando** **Citrus** County, Florida each day and has been entered as a second class mail matter at the post office in said **Pinellas, Hillsborough, Pasco, Hernando** **Citrus** County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he/she neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

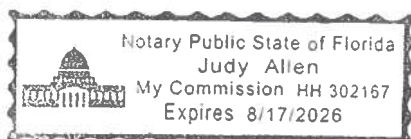
Signature Affiant

Sworn to and subscribed before me this 12/27/2023

Signature of Notary Public

Personally known	X	or produced identification
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Type of identification produced



Early Notice and Public Review of a Proposed Federal Action in Wetlands and Floodplains

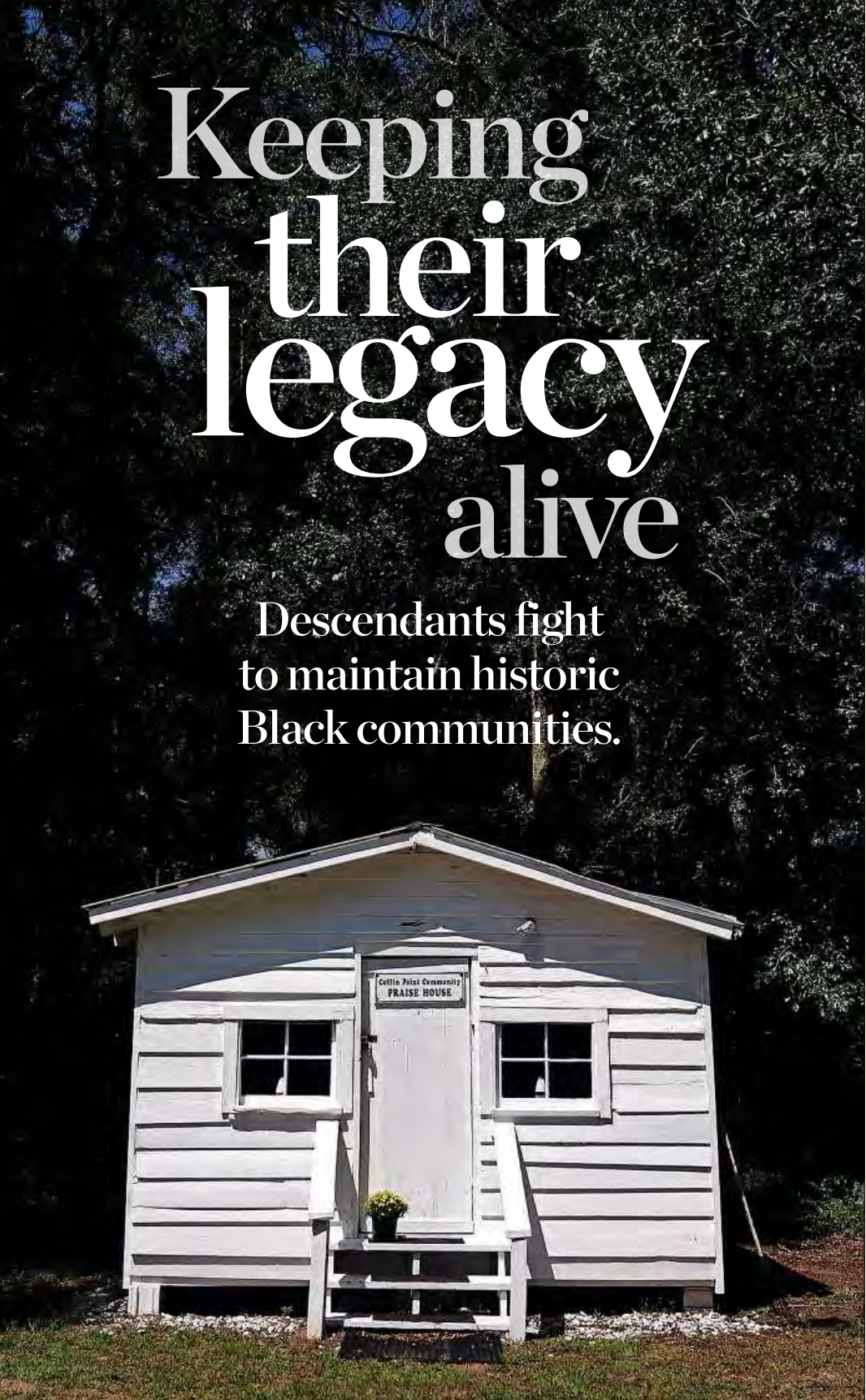
To: All interested Agencies, Groups, and Individuals

The Air Force is inviting public input on any practicable alternatives for a proposed activity within wetlands and the 100-year floodplain. The 6th Air Refueling Wing proposes to reconstruct the Combat Arms Training and Maintenance facility at MacDill Air Force Base (AFB), Florida to support ongoing training and certification of military personnel in the use of small arms. A portion of the proposed range reconstruction work would occur in wetlands and floodplains. This notice is required by Section 2(b) of Executive Order (EO) 11990, *Protection of Wetlands*; Section 2(a)(4) of EO 11988, *Floodplain Management*; and 44 Code of Federal Regulations, Part 9.8(c) to provide opportunity for early public review of proposed federal actions in wetlands and floodplains.

The public review period will run for 30 days past the published date of this notice. Written comments should be provided to 6 ARW Public Affairs, 8209 Hangar Loop Drive, Suite 14, MacDill AFB, FL 33621-5502 or via email to 6.arw.pa@us.af.mil. The telephone number is 813-828-2215. Feedback must be provided within 30 days from the date of this notice.

PRIVACY ADVISORY NOTICE

All written comments received during the comment period will be made available to the public and considered during preparation of the final Environmental Assessment. Providing private address information with your comment is voluntary and such personal information will be kept confidential unless release is required by law. However, address information will be used to compile the project mailing list and failure to provide it will result in your name not being included on the mailing list.



Keeping their legacy alive

Descendants fight to maintain historic Black communities.



The Coffin Point Community Praise House on St. Helena Island, S.C. Researchers estimate fewer than 30 historic Black towns are left, compared to more than 1,200 about a century ago.

Photos by BRYNN ANDERSON | Associated Press

BY SHARON JOHNSON
Associated Press
DAUFUSKIE ISLAND, S.C.

Sallie Ann Robinson proudly stands in the front yard of her grandmother’s South Carolina home. The sixth-generation native of Daufuskie Island, a once-thriving Gullah community, remembers relatives hosting meals and imparting life lessons on the next generation.

“I was born in this very house, as many generations of family have been as well,” said Robinson, a chef and tour guide. “I was raised here. These woods was our playgrounds.”

Long dirt roads were once occupied by a bustling community that had its own bartering system and a lucrative oyster industry.

“There were at one point over a thousand people living on this island,” Robinson said. Now, she and several cousins are the only ones of Gullah descent who remain.

Historic Black communities like Daufuskie Island are dying, and descendants like Robinson are attempting to salvage what’s left of a quickly fading history.

“The towns are the authentic source or sources of much of our culture, our history, our physical expression of place,” said Everett Fly, a landscape architect who uncovered more than 1,800 Black historic settlements through his research.

Scholars define a historic Black community or town as a settlement founded by formerly enslaved people, usually between the late 19th and early 20th century. The enclaves often had their own churches, schools, stores and economic systems.

Fly and other researchers estimate there are fewer than 30 incorporated historic Black towns left in the United States, a fraction of more than 1,200 at the peak between the 1880s and 1915.

“The ones that do remain are extremely rare. They’re extremely important,” Fly said.

The eradication of these neighborhoods can be traced back to their creation when white suprem-



Sallie Ann Robinson is working to restore 10 empty homes that used to be filled with her extended family on Daufuskie Island, S.C.

acists terrorized Black people, destroying whole blocks of homes and businesses or driving them out of town, as seen with the Tulsa Race Massacre in 1921 and the Rosewood massacre in 1923.

But in more recent times, the dwindling of Black strongholds is due in part to the culmination of amended ordinances, uneven tax rates, home devaluations and political challenges that leave communities vulnerable to developers and rampant gentrification.

“Something as simple as, they change or they rezone areas,” said Elizabeth Clark-Lewis, the director of the public history program at Howard University. “People with political power can make determinations that will ring the death bell for these towns.”

“We’ve seen gated areas, golf courses and planned unit developments directly linked to increasing the taxes and displacement of native Gullah-Geechees throughout the coast,” said Marquette Goodwine, known as Queen Quet, the leader of the Gullah-Geechee nation.

On St. Helena Island in South Carolina, massive banners dot driveways and sidewalks reading “Protect the culture, protect the history, protect the land.”

The governing Beaufort County Council blocked a golf course on Gullah-Geechee land after the developer, Elvio Tropeano, requested to remove the 503-acre plot from a zoning district on the island. The zoning district bans gated communities and resorts in locations considered culturally significant. Tropeano has since filed two legal actions against the county to appeal the **See LEGACY, 17A**

LEGAL NOTICE

Early Notice and Public Review of a Proposed Federal Action in Wetlands and Floodplains

To: All interested Agencies, Groups, and Individuals

The Air Force is inviting public input on any practicable alternatives for a proposed activity within wetlands and the 100-year floodplain. The 6th Air Refueling Wing proposes to reconstruct the Combat Arms Training and Maintenance facility at MacDill Air Force Base (AFB), Florida to support ongoing training and certification of military personnel in the use of small arms. A portion of the proposed range reconstruction work would occur in wetlands and floodplains. This notice is required by Section 2(b) of Executive Order (EO) 11990, *Protection of Wetlands*; Section 2(a)(4) of EO 11988, *Floodplain Management*; and 44 Code of Federal Regulations, Part 9.8(c) to provide opportunity for early public review of proposed federal actions in wetlands and floodplains.

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12/27/2023

0000322598-01

LEGAL NOTICE

NOTICE OF PUBLIC HEARING

In accordance with the City of Madeira Beach Code of Ordinances, the City of Madeira Beach City Charter Section 7.3B, and Florida Statutes §166.041(3)(a):

NOTICE IS HEREBY GIVEN, that the BOARD OF COMMISSIONERS of the City of Madeira Beach, will conduct a separate Second Reading and Public Hearing for the adoption of proposed Ordinance 2023-21 and Ordinance 2023-33 on Wednesday, January 10, 2023, at 2:00 p.m. The meeting will be held in the Patricia Shontz Commission Chambers located at 300 Municipal Drive, Madeira Beach, FL 33708. The title of said Ordinance is as follows:

ORDINANCE 2023-21

AN ORDINANCE OF THE CITY OF MADEIRA BEACH, FLORIDA, AMENDING ARTICLE III (BEACH DEBRIS) OF CHAPTER 42 (OFFENSES AND MISCELLANEOUS PROVISIONS) OF THE MADEIRA BEACH CODE OF ORDINANCES TO AMEND THE PURPOSE TO INCLUDE COMMERCIAL PROPERTY; INCLUDE COMMERCIAL PROPERTY IN THE DEFINITIONS; ADD COMMERCIAL PROPERTY AND PROVISION RELATING TO BLOCKING PATHWAYS TO OBSTRUCTIONS ON THE BEACH PROVISION; REQUIRE PROPERTY TO BE STORED INSIDE DURING A NAMED STORM EVENT; INCLUDE COMMERCIAL PROPERTY IN LEAVE NO TRACE INFORMATIONAL SIGNS IN RENTAL UNITS; ADD PROHIBITION REGARDING CROSSING DUNES AND THE REMOVAL OF VEGETATION ON DUNES; PROVIDING FOR CONFLICT, SEVERABILITY AND CODIFICATION; AND PROVIDING FOR AN EFFECTIVE DATE.

ORDINANCE 2023-33

AN ORDINANCE OF THE CITY OF MADEIRA BEACH, FLORIDA, AMENDING THE CAPITAL IMPROVEMENTS ELEMENT OF THE COMPREHENSIVE PLAN OF THE CITY OF MADEIRA BEACH TO UPDATE THE CAPITAL IMPROVEMENT PROGRAM (CIP) SCHEDULE OF CAPITAL IMPROVEMENTS FOR FISCAL YEARS 2024 THROUGH 2030; PROVIDING FOR CONFLICT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

Interested parties may appear at the meeting and be heard with respect to the proposed ordinances. A copy of the proposed Ordinances is available for inspection in the Community Development Department at 300 Municipal Drive, Madeira Beach, FL 33708 between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday. If you would like more information regarding the proposed Ordinance, please contact the Community Development Department at (727) 391-9951, Ext. 244 or Planning@madeirabeachfl.gov.

The meeting will be aired on Public Access TV Spectrum Channel 640 and through the City’s website.

Persons who wish to appeal any decision made by the Board of Commissioners with respect to any matter considered during a public hearing at this meeting will need a record of the proceedings, and for such purpose may need to ensure that verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is based. It is the responsibility of the person making the appeal to bear the cost of hiring a private court reporter or private court recording firm to make the verbatim record.

In accordance with Section 286.26, Florida Statutes, persons with disabilities needing special accommodation to participate in this meeting should contact the Community Development Department no later than 48 hours prior to the meeting: (727) 391-9951, Ext. 244 or fax a written request to (727) 399-1131.

12/27/2023

0000322589-01

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Appendix C
Federal Agency Coastal Zone Management Act
Consistency Determination

Federal Agency Coastal Zone Management Act Consistency Determination

Environmental Assessment for 6 SFS Small Arms Firing Range at MacDill Air Force Base, Florida

This document provides the State of Florida with the Department of the Air Force's Consistency Determination under Coastal Zone Management Act Section 307 and 15 *Code of Federal Regulations* (CFR) 930 Subpart C for the alternatives analyzed in the *Environmental Assessment (EA) for 6 SFS Small Arms Firing Range at MacDill Air Force Base (AFB), Florida*. Federal consistency with the statutes implemented under the Florida Coastal Zone Management Program is addressed in Table D-1. Pursuant to 15 CFR 930.41, the Florida State Clearinghouse has 60 days from receipt of this document to concur with, or object to, this Consistency Determination, or to request an extension, in writing, under 15 CFR 930.41(b). Florida's concurrence will be presumed if MacDill AFB does not receive its response within 60 days from receipt of this document.

Table D-1. Florida Coastal Management Program Review

Statute	Federal Consistency	Scope
Chapter 161 <i>Beach and Shore Preservation</i>	None of the alternatives under the Proposed Action would affect the state's management or preservation of beaches and shores.	This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.
Chapter 163, Part II <i>Growth Policy; County and Municipal Planning; Land Development Regulation</i>	None of the alternatives under the Proposed Action would affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 <i>State and Regional Planning</i>	None of the alternatives under the Proposed Action would affect the state's plans for water use, land development, and transportation.	Details state-level planning efforts. Requires the development of special statewide plans governing water use, land development, and transportation.
Chapter 252 <i>Emergency Management</i>	None of the alternatives under the Proposed Action would affect the state's vulnerability to natural disasters or state emergency response and evacuation procedures.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 <i>State Lands</i>	None of the alternatives under the Proposed Action would involve the use of state lands or restrict public access to state lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 <i>State Parks and Preserves</i>	None of the alternatives under the Proposed Action would affect state parks or preserves.	Addresses administration and management of state parks and preserves.

Chapter 259 <i>Land Acquisition for Conservation or Recreation</i>	None of the alternatives under the Proposed Action would affect the state's acquisition of environmentally endangered lands or outdoor recreation lands.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.
Chapter 260 <i>Florida Greenways and Trails Act</i>	None of the alternatives under the Proposed Action would affect the Florida Greenways and Trails Program.	Established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes.
Chapter 267 <i>Historical Resources</i>	Potential impacts on cultural resources are analyzed in Section 3.4 of the EA. Based on the analysis conducted, all the alternatives under the Proposed Action would have no effect on cultural resources. Therefore, each alternative would be consistent with the management and preservation of the state's archaeological and historical resources.	Addresses management and preservation of the state's archaeological and historical resources.
Chapter 288 <i>Commercial Development and Capital Improvements</i>	None of the alternatives under the Proposed Action would affect current or future business, trade, or tourism in the region.	Promotes and develops general business, trade, and tourism components of the state economy.
Chapter 334 <i>Transportation Administration</i>	None of the alternatives under the Proposed Action would affect the state's administration of transportation.	Addresses the state's policy concerning transportation administration.
Chapter 339 <i>Transportation Finance and Planning</i>	None of the alternatives under the Proposed Action would affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 373 <i>Water Resources</i>	Potential impacts on water resources are analyzed in Section 3.2 of the EA. Based on the analysis conducted, none of the alternatives under the Proposed Action would have a significant impact on water resources. Therefore, each alternative would be consistent with the state's statutes and regulations regarding the water resources of the state.	Addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians.
Chapter 375 <i>Outdoor Recreation and Conservation Lands</i>	None of the alternatives under the Proposed Action would affect recreational opportunities on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.
Chapter 376 <i>Pollutant Discharge Prevention and Removal</i>	All of the alternatives under the Proposed Action would be consistent with the state's statutes and regulations regarding the transfer, storage, or transportation of pollutants.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.
Chapter 377 <i>Energy Resources</i>	None of the alternatives under the Proposed Action would affect oil and gas resources of the state.	Addresses regulation, planning, and development of oil and gas resources of the state.

Chapter 379 <i>Fish and Wildlife Conservation</i>	Potential impacts on fish and wildlife are analyzed in Section 3.5 of the EA. Based on the analysis conducted, none of the alternatives under the Proposed Action would not have a significant impact on fish and wildlife, including protected species. Therefore, each alternative would be consistent with the state's policies concerning the protection of fish and wildlife resources.	Addresses the management and protection of the state's wide diversity of fish and wildlife resources.
Chapter 380 <i>Land and Water Management</i>	None of the alternatives under the Proposed Action would affect state management of land or water.	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.
Chapter 381 <i>Public Health, General Provisions</i>	None of the alternatives under the Proposed Action would affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 <i>Mosquito Control</i>	None of the alternatives under the Proposed Action would affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 <i>Environmental Control</i>	Potential impacts on air quality, water quality, and pollution control are analyzed in Sections 3.1, 3.2, and 3.9, respectively, of the EA. Based on the analysis conducted, none of the alternatives under the Proposed Action would have a significant impact on these resource areas. Therefore, each alternative would be consistent with the state's statutes and regulations regarding water quality, air quality, pollution control, solid waste management, and other environmental control efforts.	Establishes public policy concerning environmental control in the state.
Chapter 553 <i>Building Construction Standards</i>	All of the alternatives under the Proposed Action would comply with the state's regulations and standards pertaining to building construction.	Addresses the building construction standards established by the state.
Chapter 582 <i>Soil and Water Conservation</i>	None of the alternatives under the Proposed Action would affect the state's soil and water conservation efforts.	Provides for the control and prevention of soil erosion.
Chapter 597 <i>Aquaculture</i>	None of the alternatives under the Proposed Action would affect the state's policy pertaining to aquaculture.	Addresses enhancement and regulation of aquaculture in the state.