FINDING OF NO SIGNIFICANT IMPACT/
FINDING OF NO PRACTICABLE ALTERNATIVE

Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Pursuant to the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act of 1969 (NEPA) at 40 Code of Federal Regulations (CFR) 1500–1508 and the Department of the Air Force's Environmental Impact Analysis Process Regulations at 32 CFR 989, the Air Force has prepared an Environmental Assessment (EA) to evaluate the potential impacts on the natural and human environment associated with fire research and development (R&D) facilities at Tyndall Air Force Base (AFB), Florida. The EA is herewith incorporated by reference into this Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA).

Purpose and Need

The purpose of the Proposed Action is to replace fire R&D facilities that were damaged beyond repair during Hurricane Michael in 2018. The Proposed Action is needed because the fire R&D facilities used for training are mission essential. These facilities include space for the development and testing of firefighting equipment, personal protective equipment, and extinguishing techniques and procedures. R&D expands new field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, the Air Force Civil Engineer Center (AFCEC) cannot effectively conduct fire training activities. In addition, there would be a substantial reduction in fire R&D capacity without office and vehicle storage availability.

Proposed Action

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael. The four damaged R&D buildings are Building 9718, fire laboratories; Building 9708, fire R&D personnel administrative and office space; Building 9443, R&D fire garage; and Building 9500E, small-scale indoor fire lab/hangar.

Site work, utility lines and interconnections, pavements, stormwater management, and safety and security features would be included with the new facilities. Construction is tentatively scheduled to begin in fall 2023. No demolition is analyzed under this Proposed Action.

Fire R&D operations normally fluctuate from year to year but overall would remain consistent with the type and number of operations that have been conducted. Once constructed, fire training operations would be consistent with pre-hurricane conditions. Given that fire R&D operations would not change under the Proposed Action, the EA only addresses the impacts of relocating fire R&D operations to the new facilities.

Alternatives

Reasonable alternatives were evaluated against a set of selection standards to determine which alternatives would be carried forward for detailed environmental impact analysis. For this Proposed Action, since the previous fire R&D buildings were heavily damaged, the purpose and need dictate the construction of a new facility or modification of an existing building to accommodate the fire training mission. Due to the extensive damage caused by Hurricane Michael, few facilities are available for alteration or addition. The eastern portion of Tyndall AFB is largely undeveloped; fire training is currently supported and compatible with land use and functional and operational constraints. The EA also carried forward the analysis and conclusions from the *Final Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base, Florida*, March 2020—the "Rebuild EA"—which assessed location constraints with applicable universal and project-specific selection

standards, to narrow the scope of alternatives considered for the proposed fire R&D facility to the Silver Flag, the new AFCEC Campus in the 9400 Area, and the former footprints of all damaged facilities pre-hurricane.

Per 32 CFR 989.8(c), the Air Force may expressly eliminate alternatives from detailed analysis based on reasonable selection standards. Reasonable selection standards were applied to determine whether action alternatives considered meet the project's purpose and need and satisfy the selection standards. Accordingly, the Silver Flag location was the only action alternative carried forward as meeting the selection standards for the Proposed Action.

Proposed Action: Silver Flag Location. At this location alternative, a fire R&D facility (10,570 square feet) and a fire garage building (10,230 square feet) would consolidate the fire R&D mission activities at the Silver Flag location. The fire R&D facility would provide space for the indoor laboratories, and the garage would provide vehicle storage capacity. The proposed location for the fire garage building is the site of the former fire garage—Building 9443—that was destroyed. The new fire R&D facility would be immediately west of the garage. This site is adjacent to two aircraft fire pit test facilities with associated infrastructure. As a result, the fire R&D facilities would be compatible with the existing adjacent land uses.

The proposed site would be built with approximately 50,530 square feet of pavement to include twenty parking spaces for facility staff, ten spaces for government vehicles, and sidewalks. A mechanical yard would be built with concrete pads for an air conditioning condenser and transformer. Site construction would also include fire pit effluent water storage, cargo containers, stormwater management, trash and recycling facilities, fencing, and lighting. Utility construction would include electrical, communications, water, gas, and sanitary sewer systems. The approximate size for the stormwater management would be 23,220 square feet, and other associated infrastructure would be 2,830 square feet. The total construction footprint would be approximately 97,380 square feet. The total limit of site disturbance, to include grading and the construction footprint, would be approximately 182,950 square feet, or 4.2 acres.

The construction staging or laydown area would be on a previously disturbed lot east of Apron Road, which is east of the building construction site.

No Action Alternative. Under the No Action Alternative, the AFCEC fire R&D mission would continue to operate in temporary facilities; AFCEC personnel would continue to work out of the temporary office trailer; and there would not be a separate office space or garage to store vehicles or equipment. Laboratory fire testing would continue being conducted at the Air Force Civil Engineer East Facility in Building 1117. Small- and medium-scale testing would continue at the Sky X range, which is not suitable for this type of testing since it is a blast range. Although the No Action Alternative does not meet the project's purpose and need, it is carried forward for detailed analysis to provide a baseline against which the Proposed Action can be evaluated, as required in 32 CFR 989.8(d).

Environmental Consequences

The proposed fire R&D facilities would be constructed within Environmental Restoration Program Site TU539P-Sub, which is undergoing contamination studies for per- and polyfluoroalkyl substances (PFAS)—including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)—in association with the historic use of aqueous film-forming foam (AFFF) for fire training. This area has undergone preliminary assessments and site inspections; a remedial investigation is planned to determine the extent of contamination.

Soil and groundwater samples within TU539P-Sub show elevated levels of PFAS, and it is assumed that any ground-disturbing activities could disturb contaminated media. The Air Force has prepared Environmental Restoration Program Guidelines that will be implemented for any work within TU539P-Sub to protect health and safety, to confine contamination and prevent spreading contamination, and to

ensure the accurate sampling and characterization of soil for possible reuse or proper disposal. The detailed procedures are included in full in Appendix B of the EA; these procedures will be incorporated into all ground-disturbing activities within TU539P-Sub. Construction would not hinder future cleanup efforts as site investigation continues, and remedial actions are identified and pursued. With implementation of the identified procedures, construction activities would not result in significant impacts from TU539P-Sub.

The proposed fire R&D facilities would be equipped to combat fires and conduct necessary training using AFFF. Newer formulations of AFFF contain trace quantities of PFAS but are not considered bioaccumulative or biopersistent, unlike the legacy formulations that resulted in the PFAS contamination at TU539P-Sub. Regardless of formulation, intentional AFFF discharges would be contained, sampled, stored, and disposed of in accordance with all applicable laws and regulations. Inadvertent spills or releases would be handled as hazardous spills with immediate cleanup. Guidelines for appropriate AFFF disposal are also detailed in Appendix B of the EA, and these will be followed to ensure the fire training mission does not worsen existing contamination or contaminate new areas. Continued long-term use of AFFF would not result in significant impacts.

The Proposed Action would result in direct impacts on small areas of degraded wetlands and other surface waters (ditches), with the potential to affect the water quality and hydrology of other water resources within the study area. No 100-year or 500-year floodplains occur within the project boundaries, so there would be no direct impacts on floodplains. To minimize the potential for contaminated runoff and PFAS to affect wetlands, surface waters, and groundwater, hazardous materials and waste and contaminated media would be managed in accordance with applicable laws and regulations, Tyndall AFB environmental management plans, and the guidelines established for all construction activities near or within TU539P-Sub. Up to 4.2 acres could be cleared and graded for construction and stormwater drainage, with approximately 74,160 square feet of impervious surfaces. Based on preliminary site designs, the proposed building, parking, and stormwater infrastructure footprints would directly affect at least 0.71 acre of hydric pine flatwood wetlands, with an additional 0.52 acre of hydric pine flatwood wetlands within the limits of disturbance (i.e., a total of 1.23 acres of hydric pine). Approximately 0.05 acre of other surface waters that are part of a ditch system could also be affected. Although the new stormwater infrastructure would not function as a natural wetland, it would provide flood control and some degree of wildlife habitat and sedimentation control. However, the wetland areas and other surface waters replaced by impervious surface would become a source of stormwater runoff. During design and permitting, efforts would be made to minimize impacts on both jurisdictional and non-jurisdictional wetlands and other surface waters to the greatest extent practicable. Mitigation would be required to offset impacts on jurisdictional wetlands pursuant to Section 404 of the Clean Water Act, Part IV of Chapter 373 Florida Statutes, Chapter 62-330 Florida Administrative Code, and Chapter 62-331 Florida Administrative Code. Compensatory mitigation would be completed through mitigation options that satisfy state and federal requirements. Total site disturbance would exceed one acre, so a National Pollutant Discharge Elimination System (NPDES) permit would also be required, including soil- and erosion-control measures and best management practices to protect soil and water resources. Thus, with mitigation for impacts on jurisdictional wetlands, the Proposed Action would not result in significant impacts on water resources.

The Proposed Action would result in short-term disturbances from construction activities and a minor loss of wetland habitat. However, the project site is highly disturbed from previous development and current land uses, so potential impacts on wildlife, vegetation, and migratory birds would be negligible in consideration of the suitable habitat remaining. Federal- and state-listed species have the potential to occur within the study area for biological resources. The analysis in the EA concludes that the Proposed Action may affect but is not likely to adversely affect the following species pursuant to Section 7 of the Endangered Species Act:

- eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*), federally listed as threatened
- monarch butterfly (*Danaus plexippus*), federal candidate species
- Godfrey's butterwort (*Pinguicula ionantha*), federally listed as threatened, state listed as endangered
- telephus spurge (*Euphorbia telephioides*), federally listed as threatened, state listed as endangered

Other federally protected species that were identified as having the potential to occur in the U.S. Fish and Wildlife Service's Information for Planning and Consultation species list are not known to occur at Tyndall AFB, so the Proposed Action is not likely to affect these species. The Air Force will initiate informal consultation with the U.S. Fish and Wildlife Service and will conduct coordination with the Florida Fish and Wildlife Conservation Commission regarding listed species.

Other than the potential impacts associated with work in TU539P-Sub, as discussed above, the Proposed Action would have no impact on airspace, noise, land use, public safety and occupational health, cultural resources, infrastructure, transportation, socioeconomics, and environmental justice and the protection of children. Negligible to minor impacts would occur on air quality and earth resources. No impacts on floodplains would occur.

Mitigation Measures and Permit Requirements

The Air Force will implement any and all applicable best management practices that are required in permits. All activities will be conducted in accordance with installation management plans, including but not limited to hazardous material, hazardous waste, spill prevention, natural resources, and cultural resources management.

The following permits and mitigations are anticipated for the Proposed Action:

- Conduct all activities in accordance with the procedures identified in Appendix B of the EA pertaining to TU539P-Sub.
- Acquire all necessary wetland and water resource permits for the Proposed Action, including, but not limited to a NPDES permit, Environmental Resource Permit, State 404 Program Permit, and Clean Water Act Section 401 water quality certification.
- Provide mitigation, as determined by regulatory agencies during the permitting process and to be verified during final design, for direct impacts on wetlands and other surface waters.
- Acquire required authorizations from the Florida Department of Environmental Protection for wastewater collection/transmission systems and public drinking water system modifications.

Public Review, Agency Coordination, and Government-to-Government Coordination

The Air Force published an Early Public Notice to invite the public to comment on potential impacts on wetlands on September 28, 2022. No public comments were received. The Air Force will make the Draft EA and Draft FONSI/FONPA available for public review and comment prior to making the decision on whether to implement the Proposed Action.

The Air Force coordinated with potentially interested federal and state agencies and Native American Tribes. The Florida Division of Historical Resources as the State Historic Preservation Office stated that the proposed undertaking would have no effect on historic properties (November 7, 2022).

Finding of No Significant Impact

Based on my review of the facts and analyses presented in the attached EA, I conclude that the Proposed Actions, with implementation of measures pertaining to TU539P-Sub and mitigations for impacts on jurisdictional waters of the United States, would not have a significant impact on the natural or human environment either by itself or cumulatively. The requirements of NEPA and the CEQ's regulations have been fulfilled.

Finding of No Practicable Alternative

Executive Order (EO) 11990, *Protection of Wetland*s, directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid direct and indirect support of new construction in wetlands. EO 11998, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

The Proposed Action would result in direct and indirect impacts on wetlands and other surface waters (~1.28 acres). Wetland impacts will be reduced to the maximum extent possible through site design and implementation of environmental protection measures. Wetlands will be formally delineated, with a jurisdictional determination and compensatory mitigation, as appropriate following final design during permitting.

When identifying viable location alternatives for the fire R&D facilities, base planners considered the functional and spatial relationships across Tyndall AFB to identify areas available for development or redevelopment with compatible land use (for safety purposes and to maximize functional compatibility) and existing nearby supporting infrastructure. Other site locations considered included the new AFCEC campus in the 9400 Area and the former fire facility locations in the 9700 Area. The new AFCEC campus location was dismissed because it does not provide sufficient off-set spacing from other facilities to safely conduct small- and medium-scale fire R&D training. Additional land was not available to expand the new AFCEC campus sufficiently to provide enough space for these safety off-sets while also avoiding impacts on wetlands and the 100-year floodplain. This site has substantial wetlands (~62 acres). Reusing the former fire facility locations was dismissed because this alternative would not consolidate similar functions to maximize efficiencies. Furthermore, the locations of the former fire laboratories and administrative/office spaces are within the 100-year floodplain and at ~8 feet above mean sea level along the shoreline, which makes this location extremely susceptible to storm surge. Due to the large area containing jurisdictional wetlands at the new AFCEC Campus, and the 100-year floodplain and low shoreline elevation at the former 9700 Area, neither of these locations would have substantially avoided development in sensitive wetland and floodplain resources protected under EOs 11990 and 11998. See Table 2-2 and Section 2.4, Alternatives Eliminated from Detailed Analysis, in the EA.

Per EO 11990, the Department of the Air Force has undertaken all actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the responsibilities of the Department of the Air Force (see also Section 3.4.3 of the EA). Nevertheless, the Department of the Air Force has determined that there is no practicable alternative to impacts occurring in wetlands, and thus, that any unavoidable impacts to wetlands will be mitigated to achieve no net loss of wetland function.

Accordingly, I have determined that there is no practicable alternative to the Proposed Action, and the Proposed Action includes all practicable measures to minimize harm to the environment.

_____ _____

NAME, Rank Date

Draft

Environmental Assessment

Fire Research and Development Facilities

Tyndall Air Force Base, Florida

325th Civil Engineer Squadron

Department of the Air Force

February 2023

Cover photo credits: (left) Air Force 2021a; (right) WJHG7 2019

PRIVACY ADVISORY

This Draft Environmental Assessment (EA) is provided for public comment in accordance with the National Environmental Policy Act (NEPA); the President's Council on Environmental Quality (CEQ) NEPA Regulations (40 Code of Federal Regulations Parts 1500–1508); and 32 Code of Federal Regulations Part 989, *Environmental Impact Analysis Process* (EIAP).

The EIAP provides an opportunity for public input on Air Force decision making, allows the public to offer inputs on alternative ways for the Air Force to accomplish what it is proposing, and solicits comments on the Air Force's analysis of environmental effects.

Public commenting allows the Air Force to make better, informed decisions. Letters or other written or oral comments provided may be published in the EA. Providing personal information is voluntary. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meetings or hearings or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA; however, only the names of individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the EA.

ACCESSIBILITY

Electronic versions of this document are compliant with Section 508 of the Rehabilitation Act. This allows assistive technology to be used to obtain the available information from the document. Due to the nature of graphics, figures, tables, and images occurring in the document, accessibility is limited to a descriptive title for each item.

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
325 CES	325th Civil Engineer Squadron
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFFF	aqueous film-forming foam
AFOSH	Air Force Occupational Safety and Health
AICUZ	Air Installation Compatible Use Zones
APE	area of potential effect
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO_2e	carbon dioxide equivalents
CZMA	Coastal Zone Management Act
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EPCRA	Emergency Planning and Community Right-to-Know
FDEP	Florida Department of Environmental Protection
FNAI	Florida Natural Areas Inventory
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
HAZWOPER	Hazardous Waste Operations and Emergency Response
HWPM	Hazardous Waste Program Manager
IPaC	Information for Planning and Consultation
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
POL	petroleum, oil, and lubricants
R&D	Research and Development
RCRA	Resource Conservation and Recovery Act
RDT&E	Research, Development, Test and Evaluation
RPM	Restoration Program Manager
SPCC	Spill Prevention, Control, and Countermeasure
USACE	United States Army Corps of Engineers
USCB	U.S. Census Bureau
USEPA	United States Environmental Protection Agency
WOTUS	Waters of the United States

1 PURPOSE OF AND NEED FOR THE ACTION

The 325th Civil Engineer Squadron (325 CES) is preparing this Environmental Assessment (EA) to consider the potential consequences to the human and natural environment associated with the reconstruction of Air Force Civil Engineer Center (AFCEC) fire research and development (R&D) facilities at Tyndall Air Force Base (AFB), Florida. This EA is prepared in accordance with the National Environmental Policy Act (NEPA) as implemented by the Council on Environmental Quality's (CEQ) regulations at 40 Code of Federal Regulations (CFR) 1500–1508, as revised, and the Department of the Air Force's Environmental Impact Analysis Process (EIAP) at 32 CFR 989.

The EA will inform decision makers of the potential environmental impacts of implementing the alternatives considered therein and result in either a Notice of Intent to prepare an Environmental Impact Statement (EIS) if significant impacts would occur that cannot be mitigated, or a Finding of No Significant Impact (FONSI). Furthermore, if the chosen alternative would result in loss of wetlands or development within floodplains (pursuant to Executive Order [EO] 11990, *Protection of Wetlands*, and EO 11988, *Floodplain Management*, respectively) a Finding of No Practicable Alternative (FONPA) would be prepared in conjunction with the FONSI.

1.1 Background

On October 10, 2018, Tyndall AFB sustained significant damage from Hurricane Michael, the strongest hurricane to hit the continental United States in 25 years, causing extensive damage to facilities, infrastructure, and natural resources. Located in Bay County, Florida, Tyndall AFB borders water bodies including East Bay, Saint Andrew Bay, Saint Andrew Sound, and the Gulf of Mexico. Figure 1-1 shows the location of Tyndall AFB.

Hurricane Michael

Hurricane Michael made landfall as a Category 5 storm near Tyndall AFB. All buildings incurred some damage and almost half were severely damaged. The aerial photo below shows massive damage to Building 9443—the Fire R&D Garage—at the Silver Flag exercise site.

(NOAA Remote Sensing Division, 2018)

The AFCEC research, development, test, and evaluation (RDT&E) facilities were primarily located in the 9700 Area, as well as some other areas, across multiple facilities. Eighteen of those facilities were severely damaged during Hurricane Michael. Since that time, AFCEC fire R&D personnel are temporarily housed in an office trailer at Silver Flag; laboratory fire testing is being conducted at the Air Force Civil Engineer East Facility in Building 1117; and small- and medium-sized fire testing is being conducted at Sky X. Large-scale fire testing has not changed since the hurricane and is being conducted in the Silver Flag area.

In 2020, the Department of the Air Force prepared an EA and signed a FONSI/FONPA to analyze the replacement of numerous hurricane-damaged or -destroyed facilities across Tyndall AFB, including a consolidated AFCEC campus at the corner of U.S. Highway 98 and Farmdale Drive that would house multiple functions. Fire R&D facilities were originally considered in the 2020 EA as part of the new AFCEC campus. During site planning, the Air Force determined that the new AFCEC campus would not provide safe off-set spacing from other facilities. The present EA examines additional alternatives for

Figure 1-1. Location of Tyndall AFB

locating the fire R&D facilities. In accordance with the CEQ's regulations at 40 CFR 1501.12, the *Final Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base, Florida*, March 2020—the "Rebuild EA"—is hereby incorporated by reference into this EA (Air Force, 2020a). The Rebuild EA analyzed the demolition of hurricane-damaged facilities, narrowed the scope of alternatives for suitable AFCEC RDT&E locations (including fire R&D), and established a baseline for the affected environment post-hurricane on Tyndall AFB.

1.2 Purpose and Need

The purpose of the Proposed Action is to replace fire R&D facilities that were damaged beyond repair during Hurricane Michael in 2018.

The Proposed Action is needed because fire R&D facilities are used for training and are mission essential. These facilities include space for the development and testing of firefighting equipment, personal protective equipment, and extinguishing techniques and procedures. R&D expands new field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, AFCEC cannot effectively conduct fire training activities. In addition, there would be a substantial reduction in fire R&D capacity without office and vehicle storage availability. Overall, lack of dedicated fire R&D facilities would negatively impact training and certification for firefighters across the Air Force and Department of Defense (DOD) as well as other emergency responders, and there would potentially be a loss of valuable research.

1.3 Public and Agency Involvement

1.3.1 Interagency and Intergovernmental Coordination

During interagency and intergovernmental scoping and review, the Air Force notified relevant federal, state, and local agencies and provided at least 30 days so agencies can make known their environmental concerns regarding the Proposed Action. The Air Force contacted federal and state agencies and potentially interested federal tribes to solicit comments for consideration in preparing the Draft EA (dated September 27, 2022). The letters sent and responses received are included in Appendix A.

1.3.2 Public Review

Tyndall AFB is surrounded by water, so wetlands and floodplains are environmental constraints for many construction activities. Accordingly, the Air Force published an Early Public Notice to solicit public comment for potential

AFCEC Readiness Directorate

The AFCEC Readiness Directorate at Tyndall AFB provides readiness and emergency services support. The directorate has five divisions: (1) explosive ordnance disposal; (2) emergency management; (3) fire emergency services; (4) expeditionary engineering; and (5) requirements, R&D, and acquisition.

The fire emergency services division establishes technical and administrative policy guidance for fire emergency services operations, fire prevention, and command and control. The division develops training curriculum and designs tactics, techniques and procedures for Air Force firefighters. The division also provides direction and input for manpower, centrally procures firefighting equipment and vehicles, develops training courses and manages the certification program used by all Department of Defense firefighters and other emergency responders.

(AFCEC, 2022a)

impacts on wetlands. The Early Public Notice was published on September 28, 2022, inviting the public to comment on the project for a period of 30 days. No public comments were received for consideration in preparing the Draft EA.

The public will also have an opportunity to review the Draft EA and Draft FONSI/FONPA. The Air Force will publish a Notice of Availability to solicit public comments. The Draft EA/FONSI will be available in paper copy at the Bay County Public Library and electronically on a public-facing website.

Public comments will be included in Appendix A.

1.3.3 Agency Consultations and Government-to-Government Consultations

At a minimum, the Air Force will coordinate with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act; the Florida Department of Environmental Protection (FDEP) pursuant to the requirements of the Florida Coastal Management Program under the Coastal Zone Management Act (CZMA); and the Florida State Clearinghouse.

The Air Force received a letter from the Florida Division of Historical Resources as the State Historic Preservation Office stating that the proposed undertaking would have no effect on historic properties, provided that Tyndall AFB makes contingency plans in the case of fortuitous finds or unexpected archaeological discoveries during ground-disturbing activities (November 7, 2022; see Appendix A). No further coordination is needed pursuant to Section 106 of the National Historic Preservation Act on this matter.

Consultation letters will also be sent to potentially interested federally recognized tribes to provide notification of the action and to initiate government-to-government consultation in accordance with Section 106 of the National Historic Preservation Act.

2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael. The four R&D buildings that are being considered as part of the Proposed Action include Building 9718, fire laboratories; Building 9708, fire R&D personnel administrative and office space; Building 9443, R&D fire garage; and Building 9500E, small-scale indoor fire lab/hangar. The demolition of Buildings 9718, 9708, and 9443 was analyzed under the scope of the 2020 Rebuild EA; Buildings 9718 and 9443 have already been demolished. Building 9500E is currently not planned for demolition. Buildings 9708 and 9718 were in the 9700 Area near Saint Andrew Sound. Building 9443 was in the fire training area at Silver Flag. Building 9500E is in the Sky X Range. All of these structures are or were within the largely undeveloped Tyndall East District. Functions in this planning area include fire training, the blast range, subscale launch facilities, and other engineering and R&D functions.

Site work, utility lines and interconnections, pavements, stormwater management, and safety and security features would be included with the new facilities. Construction is tentatively scheduled to begin in fall 2023. No demolition is analyzed under this Proposed Action.

Due to the coastal, hurricane-prone location of Tyndall AFB, resiliency, sustainability, and smart technology are critical to mission assurance. Climate resiliency measures would be incorporated into building design and materials consistent with Florida Building Code. The High Velocity Hurricane Zone standards for Miami-Dade County exceed the Unified Facilities Criteria for features such as opening reinforcement, roof framing to foundation connections, and impact glazing and doors. Although Tyndall AFB is located in Bay County, these higher standards would be used for the proposed facilities. Smart technology measures would also be used for more resource-efficient building operations and enhanced capability to respond and recover in the event of any natural disaster or mission disruption.

Fire R&D operations normally fluctuate from year to year but overall would remain consistent with the type and number of operations that have been conducted. The proposed fire R&D facility would include space for the development and testing of firefighting equipment, personal protective equipment, and extinguishing techniques and procedures. Laboratories would include a calorimetry lab, subscale indoor fire lab, small-scale indoor fire lab, assembly and workspace, storage, and a fire garage. Testing and laboratory areas would include appropriate ventilation and filtration as well as safety features as determined necessary during facility design, such as fire breaks, explosion-proof lighting, electrical connections for test equipment, and a fire suppression system capable of discharging water or aqueous film-forming foam (AFFF). Any usage of AFFF would be confined with appropriate mechanisms and procedures to ensure complete containment, capture, and proper disposal of AFFF in accordance with applicable laws and regulations. Waste streams would be handled appropriately according to volume and contaminants of concern. Once constructed, planned fire research, testing, and training would be consistent with pre-hurricane conditions. Therefore, the EA will only address the impacts of relocating fire R&D operations to the new facilities.

2.2 Selection Standards

CEQ regulations and EIAP require the evaluation of reasonable alternatives. Reasonable alternatives are those that meet the underlying purpose and need, are technically and economically feasible, and meet reasonable selection standards for a particular action. The following selection standards were used to guide identification of reasonable alternatives:

1. The site must be in an area that is compatible with fire R&D operations.
2. Land use considerations aim to maximize functional compatibility and minimize or eliminate incompatibilities from operational (e.g., safety setbacks) or natural constraints.
3. The site should consolidate similar functions and organizations to maximize efficiencies.
4. The site should have existing access roadways and infrastructure.
5. The site must be at least two acres of available land to ensure there is enough space for required facilities, infrastructure, and safety.

Base planners review functional and spatial relationship concepts, current and planned facility locations, environmental conditions, and the existing on-base environment to determine site availability and viability. For this action, since the previous fire R&D buildings were heavily damaged, the purpose and need dictate the construction of a new facility or modification of an existing building to accommodate the fire R&D mission. Due to the extensive damage caused by Hurricane Michael, few facilities are available for alteration or addition.

At Tyndall AFB, four planning districts (i.e., West District, Support Area District, Flightline Area District, and the East Planning District) are established within which the uses and facilities are generally complementary within each district's boundaries. The West District and Support Area District contain housing, dining facilities, medical facilities, recreational facilities, and other base support functions. Most of these are not functionally compatible uses with the fire R&D mission. AFCEC has support facilities in the Support Area District, but this area does not have two acres available along the developed roads and utilities to safely expand the fire R&D mission here. Therefore, these districts were not explored in more detail as potential locations for this Proposed Action.

The Flightline Area District includes runways, taxiways, aprons, hangars, air traffic control, base operations, aircraft maintenance, munitions storage, drone missions, and other airfield mission facilities and infrastructure. The immediate flightline area is already densely developed, and available land is set aside for flight mission uses or operationally constrained by munitions storage and airfield clear zones. The northern, open portion of the Flightline District does not have existing roadways and infrastructure to support the fire R&D facilities; therefore, it was also not explored in more detail as a potential location for the Proposed Action.

The East Planning District contains fire training; launch facilities; a blast range; and AFCEC engineering, research, training, and laboratory facilities. The eastern portion of Tyndall AFB is largely undeveloped, and there is adequate acreage available for development as well as existing infrastructure and roadways. Fire training is currently supported and compatible with land use and functional and operational constraints. Therefore, only the East Planning District was deemed viable, with a focus on those areas large enough to support fire R&D facilities with access to roadways and infrastructure. Within the East Planning District, there are large areas with natural constraints to development such as wetlands and floodplains, and areas with operational constraints such as the blast range and explosives safety quantity distance arcs.

This EA carries forward the analysis and conclusions from the Rebuild EA, which assessed location constraints with applicable universal and project-specific selection standards, to narrow the scope of alternatives considered for the proposed fire R&D facility to the Silver Flag site adjacent to existing fire training. The new AFCEC Campus in the 9400 Area, as presented in the Rebuild EA, and the former footprints of all damaged facilities pre-hurricane, were also examined.

2.3 Alternatives Considered in Detail

2.3.1 Silver Flag Location

At this location alternative, two replacement facilities to consolidate fire R&D mission activities would be constructed at the Silver Flag location: a fire R&D facility and a fire garage building. The fire facility would provide space for the indoor laboratories and the garage would provide vehicle storage capacity. The proposed location for the fire garage building is the site of the former fire garage—Building 9443—that was destroyed. The new fire R&D facility would be immediately west of the garage. This site is adjacent to two aircraft fire pit test facilities with associated infrastructure. As a result, the fire R&D facilities would be compatible with the existing adjacent land uses.

Silver Flag

The Silver Flag exercise site provides contingency combat support training to multiple Air Force specialties. Fire protection is a unique aspect of training at Silver Flag, and the site includes multiple live-fire training props to simulate valuable realistic training.

(325 FW/PA, 2021; Air Force, 2016a)

The site would be cleared and graded for construction and stormwater drainage. Contamination is known to occur in this area. Environmental Restoration Program Site TU539P-Sub is within the site boundaries, and there are also ongoing contamination studies for per- and polyfluoroalkyl substances (PFAS)—including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Construction activities would be conducted in accordance with Occupational Safety and Health Administration (OSHA) Standards. All excavated soils would be tested and characterized and then stored, handled, transported, and disposed of in accordance with applicable laws and regulations. Notably, in accordance with the Air Force's Memorandum for Record that was developed in coordination with FDEP, soil would be screened for PFOS and PFOA. Soil that meets Air Force and other contract screening criteria but not FDEP provisional PFOS and PFOA standards would remain on-site for reuse (Air Force, 2021b). Refer to Appendix B for guidelines involving work within TU539P-Sub. Construction would require soil excavation up to 48 inches below the graded surface, fill with certified clean materials, and compaction per site design; the foundation/asphalt would be poured on top. Construction size and locations, the increase in impervious surfaces, and the limits of disturbance are shown in Figure 2-1 and Table 2-1. The limits of disturbance includes an area that would be cleared, graded, or otherwise affected by construction activity.

The proposed site would be built with approximately 50,530 square feet of pavement to include twenty parking spaces for facility staff, ten spaces for government vehicles, and sidewalks. A mechanical yard would be built with concrete pads for an air conditioning condenser and transformer. Site construction would also include fire pit effluent water storage, cargo containers, trash and recycling facilities, fencing, and lighting.

Once installed, utility consumption would be privatized with existing privatization agreements. Construction would include the following interconnections:

- Electrical (minimum of 36 inches deep)
- Communications (conduits at a minimum of 10 inches below the concrete cover cap)
- Water (waterpipes at least 12 inches deep or less than 6 inches below the frostline)
- Gas (gas service lines would have at least 24 inches of cover)
- Sanitary sewer systems (wet wells were sized to allow for the minimum depth of 18 inches and maximum depth of 10 feet between pump-on and pump-off depth and for containment of the pumps)

The construction staging or laydown area would be located east of Apron Road, which is east of the building construction site. This area is previously disturbed with a few scattered trees, some small industrial buildings, and vehicles that are stored at the site.

This site meets most of the selection standards (see also Section 2.3); however, wetlands are located within the general project area. Final site design could likely minimize, but not completely avoid, impacts on wetlands.

Table 2-1. Size of Construction Footprint, Impervious Surface, and Limits of Disturbance at the Silver Flag Location

Component	Approximate Size (square feet)
Fire R&D Facility	10,570
Fire Garage Building	10,230
Parking, Pavements	50,530
Stormwater Management	23,220
Associated Infrastructure	2,830
Total Construction Footprint	**97,380 square feet/2.2 acres**
Increase in Impervious Surfaces [1]	74,160 square feet/1.7 acres
Limits of Disturbance [2]	182,950 square feet/4.2 acres

Notes:
[1] The area of increased impervious surfaces includes the buildings, parking and pavements, and associated infrastructure. Stormwater infrastructure may include some structural components but would primarily be used as pervious water storage.
[2] See area depicted in Figure 2-1 for the limits of disturbance. The construction footprint for project components would be entirely within the limits of disturbance, which is the area that would be cleared, graded, or otherwise affected by construction activity.

2.3.2 No Action Alternative

Under the No Action Alternative, the AFCEC fire R&D mission would continue to operate in temporary facilities because their respective facilities were damaged or destroyed by Hurricane Michael. AFCEC personnel would continue to work out of the temporary office trailer at Silver Flag. Laboratory fire testing would continue being conducted at the Air Force Civil Engineer East Facility in Building 1117. Small- and medium-scale testing would continue at the Sky X range, likely in Building 9500E. Large-scale fire testing would continue to be conducted in the Silver Flag area. Under the No Action Alternative, there would not be a separate office space or garage to store vehicles or equipment. Continuing operations at these current, temporary locations would leave some assets unprotected from the elements, which could impair future mission demands. Furthermore, the current location of the small- and medium-scale testing is not suitable as Sky X is a blast range; Building 9500E was severely damaged and has not been improved since Hurricane Michael. Although the No Action Alternative does not meet the project's purpose and need, it is carried forward for detailed analysis to provide a baseline against which the Proposed Action can be evaluated, as required in 32 CFR 989.8(d).

Figure 2-1. Silver Flag Location

2.4 Alternatives Eliminated from Detailed Evaluation

Alternative locations were considered that meet the purpose and need against selection standards. The Air Force developed a master plan in support of rebuilding Tyndall AFB post-hurricane with a focus on consolidating land uses and colocating similar functions. As discussed in Section 2.2, alternative locations were considered only within the Tyndall East Planning District since it is the only suitable area on the installation for fire research and testing. Preferred locations include areas with existing roadways and infrastructure that are adjacent to compatible land uses.

Per 32 CFR 989.8(c), the Air Force may expressly eliminate alternatives from detailed analysis based on reasonable selection standards. Alternatives considered and dismissed from detailed evaluation are discussed in the following subsections. Table 2-2 provides a comparison of each alternative against the selection standards identified in Section 2.2. Given that the large-scale fire testing already occurs at Silver Flag, it is considered the most desirable area to construct all or some of the new facilities for the small- and medium-scale fire testing and storage. Accordingly, the Silver Flag location for the Proposed Action is carried forward for detailed evaluation in this EA. The No Action Alternative is also carried forward as required in 32 CFR 989.8(d).

2.4.1 New AFCEC Campus Location (9400 Area)

AFCEC facilities were originally located in the 9700 Area of Tyndall AFB, which sustained significant hurricane damage, and the RDT&E Campus will undergo a major reconstruction at a new 9400 Area location. The Air Force considered constructing the AFCEC fire R&D facility within the 9400 Area, as analyzed in the 2020 Rebuild EA, alongside other research, vehicle maintenance, cyber operations, materials testing labs, robotics range, and various storage facilities, as well as a new satellite fire station. However, due to the nature of fire research and training, which involves controlled fire operation, safety concerns require off-set spacing from other facilities that cannot be achieved at this location. As a result, this alternative does not meet the need of providing new facilities that meet applicable fire training safety requirements.

The FONSI/FONPA that approved the projects analyzed in the 2020 Rebuild EA noted that the location proposed for the new 9400 Area contained the greatest wetland acreage of all the development areas for the rebuild projects (Air Force, 2020a). No practicable alternatives were identified that fully satisfied the selection standards for relocating the AFCEC campus to this location. Subsequent wetland delineation of the new 9400 Area mapped approximately 60 acres of federal- or state-jurisdictional wetlands and approximately 2 acres of other surface water bodies (Air Force, 2021d). Areas of 100-year floodplain are within the site and immediately west and north of the site (Air Force, 2020a). Therefore, the 9400 Area site location presents substantial wetland constraints and moderate floodplain constraints.

For these reasons, this alternative was eliminated from detailed evaluation for the proposed fire R&D facilities.

Table 2-2. Comparison of Alternatives Against Selection Standards

Selection Standard	Silver Flag Location	New AFCEC Campus (9400 Area)	Former Locations (Buildings 9718, 9708, 9443, and 9500E)	No Action Alternative
1. Compatible with fire R&D operations	Yes: Fire training already occurs at the Silver Flag fire pits. Consolidating all fire operations to one location on base is preferred.	No: This location does not provide sufficient off-set spacing from other facilities to safely conduct small-and medium-scale fire training. Expansion of the campus boundaries would encroach further into operational and environmental constraints.	Yes: Fire operations would be compatible at their former locations.	Partially: Continued operations in existing facilities leaves some assets unprotected from the elements.
2a. Minimizes or eliminates operational constraints	Yes: Fire training is operationally compatible. Location has known PFAS contamination, but measures have been identified to ensure safety. No other operational constraints are present (e.g., explosives safety, airfield surfaces).	Yes: Explosive safety arcs are partially within the site and to the north, but these should not present conflicts in use.	Partially: Reuse of Building 9500E in the Sky X blast range presents some operational challenges. Facilities are completely within Environmental Restoration Program sites; measures could be identified to ensure safety.	Partially: Ongoing use of Building 9500E in the Sky X blast range presents some operational challenges.

Selection Standard	Silver Flag Location	New AFCEC Campus (9400 Area)	Former Locations (Buildings 9718, 9708, 9443, and 9500E)	No Action Alternative
2b. Minimizes or eliminates natural constraints	Yes/Partially: Site is outside 100- and 500-year floodplains. Site is ~15 feet above mean sea level. Wetlands are partially within the site boundaries (1.28 acres).	Partially: Site is ~20 feet above mean sea level. Site location and surrounding area is within portions of the 100-year floodplain. Substantial areas of wetlands are within and surrounding the site (62 acres).	No: The former fire laboratories and administrative/office spaces are located within the 100-year floodplain and at ~8 feet above mean sea level. This site is extremely susceptible to storm surge. Wetlands are within the general area but could likely be avoided.	Yes: Continuing to use the existing facilities would not affect floodplains or wetlands; these areas are outside the 100- and 500-year floodplains and wetlands.
3. Consolidates similar functions and organizations to maximize efficiencies	Yes: Consolidating all fire training and fire R&D operations to one location maximizes operational efficiencies.	Partially: Fire R&D and many AFCEC missions would be at the new campus; however, large-scale fire operations would still occur at the fire pit.	No: The fire R&D facilities as well as many other AFCEC missions would be in multiple facilities across the base.	No: The fire R&D facilities as well as many other AFCEC missions would be in multiple facilities across the base.
4. Existing access roadways and infrastructure	Yes: Existing roadways and infrastructure are available for fire training.	Yes: Site is located along access roadways. Utility interconnections would be included during AFCEC campus construction.	Yes: Rebuilding in former locations would reuse previous roadways and infrastructure, though repairs would be needed.	Yes: Continued operations in existing facilities would use existing roadways and infrastructure.
5. At least 2 acres of available land	Yes: Sufficient land is available.	No: Land is available for development but not with sufficient fire safety off-set.	Yes: Former locations are available for redevelopment.	Not applicable.

(AFCEC, 2019; Air Force, 2020a; USGS, 2022)

Key: AFCEC = Air Force Civil Engineer Center; PFAS = per- and polyfluoroalkyl substances; R&D = research and development.

2.4.2 Former Locations at Buildings 9718, 9708, 9443, and 9500E

The Air Force considered constructing the fire R&D facilities within the approximate footprints of their former locations. As already stated, these buildings were damaged beyond repair during Hurricane Michael. Buildings 9718 and 9443 have already been demolished, and Building 9708 was analyzed for demolition under the Rebuild EA though not yet demolished. Building 9500E is still standing but would require rebuilding for sustained use in the future. Under this alternative, Buildings 9708 and 9500E would be demolished, and all four buildings and associated infrastructure would be rebuilt with the same general locations and interconnections. This alternative does not fully meet several selection standards.

All of these facilities are located in the East Planning District; however, their locations are spread out over several miles among three areas. Previously, pre-hurricane, AFCEC laboratories and facilities were located in the 9700 Area, but the RDT&E functions will be relocated to the new 9400 Area. Locating the fire laboratories and administrative/office spaces in their former locations, with the fire garage at Silver Flag, indoor testing at the Sky X range, and other AFCEC RDT&E functions at the new 9400 Area would not maximize functional land use capabilities, nor would it consolidate similar functions and organizations to maximize efficiencies.

The former locations of Building 9708 and 9718 in the 9700 Area are adjacent to the shoreline. The former footprints of these facilities (totaling approximately 6,550 square feet) and the surrounding area on the peninsula are within the 100-year floodplain. The approximate elevation is 8 feet above mean sea level, and this area is extremely susceptible to storm surge. Replacing these two facilities at this location would require floodproofing measures that conform to current standards, such as raising the minimum elevation to at least 17 feet above mean sea level (AFCEC, 2019). Locating the fire laboratories and administrative/office spaces in their former locations would pose incompatibilities with the floodplain and shoreline with an increased probability of flooding in the future that would impact future resiliency and sustainment of the fire R&D mission capability.

For these reasons, this alternative was eliminated from detailed evaluation for the proposed fire R&D facilities.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter presents both a baseline of the existing environment for affected resources and a discussion of the anticipated direct and indirect environmental consequences of implementing the Proposed Action or the No Action Alternative. The study area generally includes the Silver Flag fire training area where the facilities are proposed for construction; however, the specific study area may vary from resource to resource depending on the extent to which that resource may be affected.

Resources evaluated in detail for potential impacts include the following: air quality, land use, earth resources, water resources, biological resources, hazardous materials and wastes and contaminated sites, socioeconomics, and environmental justice.

The potential impacts on several resource areas were initially examined and determined to be negligible or nonexistent. The following summarizes those resources not analyzed in detail and the basis for this conclusion:

Airspace. The Proposed Action would not interfere with airspace use at any point during or after construction. Therefore, airspace is not analyzed in further detail.

Noise. An assessment of noise includes noise sources and sensitive receptors. Noise levels at the fire training area at Silver Flag are less than 65 decibels day-night average sound level from aircraft operations (Air Force, 2016b), which is consistent and compatible with the training, industrial, and open space land uses at Silver Flag and immediately surrounding areas.

The Proposed Action would cause temporary increases in noise levels from operating heavy equipment like backhoes, graders, bulldozers, diesel generators, and dump trucks. Some equipment would be transported to the site and remain for the duration of construction. Noise levels associated with site preparation and construction would generally range from 74 to 95 decibels at 50 feet (Federal Transit Administration, 2018); these levels would be highest in the immediate vicinity and dissipate with distance. Noise from these activities would be intermittent, as equipment and activities would not occur at one continuous level. The closest noise-sensitive receptors include residences on the other side of East Bay, which is approximately 0.75 mile (3,960 feet) from the construction site. At this distance, noise levels from construction equipment would dissipate below the ambient noise environment.

Dump trucks and delivery trucks, one to several each day, would access the site on a regular basis using U.S. Highway 98/Florida Highway 30, to Farmdale Road, to the Silver Flag site (USACE, 2021). Short-term, intermittent noise from increased truck traffic would not be significant to the surrounding open space, industrial land uses, and commercial land uses along this access route (Air Force, 2016b).

The Proposed Action would not change noise levels or introduce different types of equipment within the Silver Flag fire training area. Therefore, noise effects on human populations are not analyzed in further detail.

Public Safety and Occupational Health. Public safety and occupational health encompass the regulations enacted to keep people safe. The Silver Flag site is in a training area that is entirely within the boundaries of Tyndall AFB and well removed from housing, dining facilities, medical facilities, schools, and daycare facilities. Since Silver Flag is restricted from general public access, consideration of health and safety includes construction site safety and operational and mission safety concerns.

Construction activities have inherent risks such as noise, falling, use of petroleum or toxic substances, or collisions with equipment. All construction activities would be conducted by qualified personnel in accordance with applicable safety regulations and standards stipulated by OSHA and Air Force Occupational Safety and Health (AFOSH). Companies and individuals contracted to perform construction on Air Force installations are responsible for adhering to OSHA and AFOSH requirements to minimize risks from construction site hazards, such as the use of personal protective equipment, safety data sheets, and a health and safety plan.

During the site selection process for the Proposed Action, specific selection standards were used to identify reasonable alternatives for the siting of the fire facilities (Section 2.2). The Silver Flag site was selected to ensure compatible land uses and to meet size requirements for safe fire R&D operations. The area proposed for the fire R&D facilities is outside explosive safety quantity distance arcs and range operations.

The most important safety constraint is the presence of known PFAS contamination in the project vicinity, which affects both construction safety and mission safety. Environmental Restoration Program Site TU539P-Sub is within the construction area; PFAS investigations are ongoing related to this contamination. PFAS and associated contamination are discussed in more detail in Section 3.6, Hazardous Materials and Wastes and Contaminated Sites. The current scientific research suggests that exposure to high levels of certain PFAS can lead to adverse health outcomes, which include reproductive effects in women, developmental effects or delays in children, increased risk of some cancers, reduced ability of the body's immune system, interference with the body's natural hormones, and increased cholesterol levels (USEPA, 2022a). Specific guidelines have been established to guide all soil-disturbing and construction activities within TU539P-Sub (see Section 3.6.3.2 and Appendix B). Adherence to these identified procedures would minimize the potential for construction workers to be directly exposed to contamination and safeguard against contaminated media extending beyond the boundaries of TU539P-Sub. Therefore, public health and occupational safety are not discussed in further detail as a resource; safety implications associated with TU539P-Sub and PFAS contamination are addressed in detail in Section 3.6.

Cultural Resources. Cultural resources include historic properties, which are prehistoric or historic buildings, sites, districts, objects, or structures eligible for the National Register of Historic Places (NRHP; 54 U.S.C. 300308 and 36 CFR 800.16(l)(1)). Also included are properties of traditional religious and cultural importance to a Native American tribe or Native Hawaiian organization that meet NRHP eligibility criteria. The Tyndall AFB Integrated Cultural Resources Management Plan provides data on built resources within the Silver Flag area including the project area (Air Force, 2020b). The Area of Potential Effect (APE) for archaeological and built resources includes the proposed project construction boundaries and immediately surrounding area as well as the staging area.

In 2019, Wood Environment & Infrastructure Solutions, Inc. conducted a Phase I archaeological survey for Tyndall AFB (Bradley et al., 2020). This survey area was immediately to the north, south, and east of the construction area. The west is bounded by a runway and was not surveyed. The construction area for the fire R&D facilities was not included in the 2019 Wood archaeological survey due to the coverage of wetlands and disturbed soils across the entire location. The staging area for the fire R&D facilities was included in the 2019 Wood survey boundaries but determined to be disturbed and not surveyed. The findings of this 2019 survey were used to inform archaeological conditions of the APE for this Proposed Action.

No archaeological sites have been identified within the APE. No archaeological sites were identified in the 2019 Wood survey of the surrounding 150 acres. As previously stated, the entire project area was excluded from the 2019 survey due to the high level of disturbed soils and wetland coverage; therefore, the area has low archaeological potential. (See inset on the following page showing the 2019 survey area,

labeled "TY-166.") In the event of an unanticipated discovery (including human remains) during ground-disturbing activities, the standard operating procedures outlined in the ICRMP would be followed; all work would cease until cleared by the Tyndall AFB Cultural Resources Manager (Air Force, 2020b).

No built resources within the entire Silver Flag area, including the APE, are considered historic. All built resources within the Silver Flag area were built in 1991 or later and have not been evaluated for the NRHP (Air Force, 2020b). Due to their recent construction dates, they do not meet eligibility requirements for the NRHP, nor do they appear to meet any criteria exceptions for the NRHP to make them exceptionally significant for resources less than 50 years of age.

For these reasons, cultural resources are not analyzed in further detail.

Area of Potential Effect and Archaeological Survey Areas in the Study Area

(Bradley et al., 2020)

The Air Force received a letter from the Florida State Historic Preservation Office stating that the proposed undertaking would have no effect on historic properties pursuant to Section 106 of the National Historic Preservation Act (November 7, 2022; see Appendix A).

Consultation letters will also be sent to potentially interested federally recognized tribes to provide notification of the action and to initiate government-to-government consultation in accordance with Section 106 of the National Historic Preservation Act.

Infrastructure. Infrastructure systems were extensively damaged during Hurricane Michael. Since that time, as rebuilding has occurred (as analyzed in the Rebuild EA), local utilities have been repaired or replaced as needed with construction efforts. The Rebuild EA analyzed the replacement of 48,510 linear feet of potable water lines; 15,620 linear feet of wastewater lines; 22,605 linear feet of stormwater drainage; 120,851 linear feet of electrical lines; 22,530 linear feet of natural gas lines; and 80,622 linear feet of communications lines (Air Force, 2020a). The replacement of this infrastructure was considered for individual projects and across the entire base to ensure that new infrastructure systems will meet current and forecasted mission needs. Furthermore, the planning efforts associated with rebuilding Tyndall AFB post-hurricane considered utility redundancies to reduce consumption of fuel, energy, and water for improved sustainability (Air Force, 2020a). Utility systems on Tyndall AFB are privatized.

The proposed fire R&D facilities would require electrical, communications, water, gas, and sanitary sewer interconnections. These utilities are available in proximity to the construction site. Connecting new building utility lines to existing infrastructure can usually be accomplished with no service disruptions; however, intermittent, localized interruptions are possible. Authorizations from the FDEP would be acquired for wastewater collection and transmission systems and public drinking water system modifications. Once installed, utilities would be managed according to existing privatization agreements. Therefore, infrastructure systems are not analyzed in further detail.

Transportation. Short-term, localized increases in construction-related traffic accessing Silver Flag would be expected. Construction vehicles would travel west on U.S. Highway 98/Florida Highway 30, to Farmdale Road (located on installation property), to the Silver Flag site (USACE, 2021). Large construction equipment would be transported to the site and generally remain for the duration of construction at the staging area just east of the construction site. Other equipment, such as heavy trucks for hauling construction waste and delivering construction materials, would arrive more frequently, depending on the intensity of construction. Using empirical estimates to approximate potential construction materials and waste based on building square footage (USEPA, 2013), approximately 330 trucks could be needed over the duration of construction. This is approximately 660 construction truck trips. On average, one to several trucks would be expected each day, though truck numbers would be higher during the initial site preparation phase. Construction workers would also arrive to and from the installation each day. U.S. Highway 98/Florida Highway 30 is a major roadway that would not be affected by this minor increase in truck traffic. Silver Flag is remote with relatively low volumes of traffic compared with support or flightline areas of Tyndall AFB.

No additional personnel would commute to and from the installation as a result of the Proposed Action, though there would be minimal changes in the roads used on Tyndall AFB. AFCEC fire R&D personnel are already located at a temporary trailer in Silver Flag accessed via Farmdale Road. Small- and medium-sized testing is currently at Sky X, which is accessed farther east on U.S. Highway 98, and laboratory fire testing is currently at Building 1117 on the western portion of the installation. These shifts along U.S. Highway 98 would have negligible impacts on road capacity or level of service. The proposed fire R&D facility would include on-site parking.

For these reasons, transportation is not analyzed in further detail.

3.1 Air Quality

Air quality is determined by the types and amounts of pollutants emitted into the atmosphere, the size and topography of the affected air basin, and the prevailing meteorological conditions. Criteria air pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter for which ambient air quality standards have been set.

The baseline standards for criteria pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards. These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare. Based on measured ambient air pollutant concentrations, the U.S. Environmental Protection Agency (USEPA) designates whether areas of the United States meet the NAAQS. Those areas demonstrating compliance with the NAAQS are considered “attainment” areas, while those not in compliance are known as “nonattainment” areas. Those areas that cannot be classified on the basis of available information for a particular pollutant are “unclassifiable” and are treated as attainment areas until proven otherwise.

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth’s temperature. Climate projections for the United States indicate continued warming in all seasons, higher heat indices, increased drought, and more intense hurricanes (Intergovernmental Panel on Climate Change, 2007). The USEPA has determined that the combined emissions of six GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere may “reasonably” be anticipated to endanger public health and welfare (USEPA, 2009) and, thus, should be considered pollutants covered under the Clean Air Act. Currently, there are no standards similar to the NAAQS for GHGs.

3.1.1 Existing Conditions

3.1.1.1 Criteria Pollutants

An air emissions inventory qualitatively and quantitatively describes the amounts of emissions from a facility or within an area. Emissions inventories are designed to locate pollution sources, define the type and size of the sources, characterize emissions from each source, and estimate total mass emissions generated over a period of time, normally one year. Inventory data establish relative contributions to air pollution concerns by classifying sources and determining the adequacy as well as the necessity of air regulations.

For comparison purposes, Table 3-1 presents the USEPA's 2017 National Emissions Inventory data for Bay County, Florida (USEPA, 2022b). The county data include emissions from point, area, and mobile sources. Point sources are stationary sources that can be identified by name and location. Area sources are point sources whose emissions are too small to track individually, such as a home or small office building, or a diffuse stationary source, such as wildfires or agricultural tilling. Mobile sources are any kind of vehicle or equipment with gasoline or diesel engine, an aircraft, or a ship. Two types of mobile sources were considered: on-road and nonroad. On-road mobile sources consist of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Nonroad sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles.

To provide for a more conservative analysis, Bay County was selected as the study area instead of the USEPA-designated Air Quality Control Region, which is a much larger area. Bay County is currently classified as being in attainment for all criteria pollutants (USEPA, 2022c). Therefore, a General Conformity applicability assessment is not required.

Table 3-1. Emissions Inventory for Bay County (2017)

County	CO (tpy)	NO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_x (tpy)	VOC (tpy)	Pb (tpy)
Bay County	35,229	7,328	4,955	2,116	1,210	29,095	206

(USEPA, 2022b)

Key: CO = carbon monoxide; NO_x = nitrogen oxides; Pb = lead; PM_{10} = particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; tpy = tons per year; VOC = volatile organic compound.

3.1.1.2 Greenhouse Gases

The six primary GHGs are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride as well as other GHGs such as nitrogen trifluoride are generated in relatively small quantities and most often by very specific niche industries, such as electronic component manufacturing. Therefore, only emissions of carbon dioxide, methane, and nitrous oxide are considered in this EA. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the Earth's surface. GHGs were calculated and analyzed in terms of carbon dioxide equivalents (CO_2e), which is a term that describes various GHGs in a common unit based on the amount of carbon dioxide that would have the equivalent warming potential.

Table 3-2 provides the 2017 National Emissions Inventory for GHGs in Bay County. While there are currently no regulatory thresholds for GHGs, this provides a point of reference for evaluating potential climate change impacts from implementation of the Proposed Action and alternatives within the scope of NEPA.

Table 3-2. Greenhouse Gas Emissions Inventory for Bay County (2017)

County	CO_2 (tpy)	CH_4 (tpy)	N_2O (tpy)	CO_2e (tpy)
Bay County	5,004,359	2,215	52	5,075,249

(USEPA, 2022b)

Key: CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; N_2O= nitrous oxide; tpy = tons per year.

3.1.2 Evaluation Criteria for Environmental Consequences

Because the study area is classified as being in attainment for all pollutants, "insignificance indicators" were used for comparison. Although not applicable in a regulatory capacity, these indicators provide an indication of the significance of potential impacts on air quality based on current ambient air quality relative to the NAAQS. These insignificance indicators are the 250 tons per year Prevention of Significant Deterioration major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5 percent of any NAAQS) and the General Conformity Rule *de minimis* values (25 tons per year for lead and 100 tons per year for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5 percent of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance of one or more NAAQS. For further detail on insignificance indicators see Chapter 4 of the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II – Advanced Assessments* (Air Force, 2019a).

3.1.3 Proposed Action

Total net direct and indirect emissions associated with the Proposed Action were estimated using the Air Force's Air Conformity Applicability Model (ACAM; version 5.0.18a) on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available including algorithms, emission factors, and methodologies (Air Force, 2020c; Air Force, 2020d).

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. To provide a worst-case scenario for air emissions, construction was assumed to occur over the course of one calendar year. This is a worst-case estimate because construction would likely occur over multiple calendar years. Steady-state emissions would be zero because the fire R&D mission would remain the same; there would be no changes in emissions and therefore no steady state emissions associated with the Proposed Action. Table 3-3 provides the net emissions for the Proposed Action compared against the significance indicator levels. There are currently no thresholds for GHGs.

Table 3-3. Proposed Action Construction Emissions

	CO (tpy)	NO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_x (tpy)	VOC (tpy)	Pb (tpy)	CO_2e (tpy)
Proposed Action Emissions	6.53	5.41	23.63	0.23	0.01	1.16	0.00	1,398
Significance Indicator	100	100	100	100	100	100	25	—
Exceedance?	No	No	No	No	No	No	No	—

Key: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; NO_x = nitrogen oxides; Pb = Lead; PM_{10} = particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; tpy = tons per year; VOC = volatile organic compound.

All criteria pollutant emissions would be well below the significance indicator levels. General Conformity applicability assessment is not necessary since the study area is in attainment for all criteria pollutants. See Appendix C for the Record of Air Analysis and ACAM analysis.

Emissions associated with the Proposed Action would not generate significant quantities of any pollutants. Furthermore, these emissions would be temporary, only lasting the duration of the construction process. Once completed, emissions would return to baseline levels. Therefore, there would be no significant impacts on air quality under the Proposed Action.

3.1.4 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be completed, and there would be no changes. AFCEC fire R&D mission would continue to operate in temporary facilities and air emissions would remain at current baseline levels, as discussed in Section 3.1.1. There would be no impact on air quality in the study area.

3.2 Land Use

Land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. The meanings of various land use descriptions, labels, and definitions vary among jurisdictions. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Land uses may be regulated by management plans such as base installation development plans, master plans, or Air Installation Compatible Use Zones (AICUZ), and local policies and ordinances (e.g., zoning) that determine the type and extent of land use allowable in specific areas. The purpose of such plans and policies is to separate incompatible uses, ensure public health and safety, and provide for long-term productivity and sustainment of land resources. Tyndall AFB works with county and municipal offices to define and ensure compatible land uses and activities in the surrounding community to sustain the military mission (Bay County, 2021).

3.2.1 Existing Conditions

The study area for land use is within the Tyndall East Planning District and includes the proposed construction footprint at the Silver Flag area, the staging construction area, and the immediately adjacent areas that could be subject to effects from actions such as noise or site runoff. The Tyndall East Planning District meets the selection standards of being within a compatible land use area regarding issues like noise or safety.

The Air Force defines on-base land uses. The Silver Flag area is designated as Training, the Sky X area is designated as Open Space, and the 9700 Area is designated as Industrial (Air Force, 2021c). The affected environment does not intersect with AICUZ areas from the airfields. Environmental Restoration Program Site TU539P-Sub is within the study area, and there are ongoing contamination studies for PFAS chemicals—including PFOS and PFOA; see Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, for more information.

Bay County classifies all of Tyndall AFB as public/institutional land use. Off-base, approximately 0.75 mile northeast of the Silver Flag area is mostly Conservation Habitat with some Single/Multi-family

Residential and Agriculture (Bay County, 2022). Approximately 1.5 miles east of the Sky X test area is Agriculture/timberland. Conservation Habitat is about 1 mile from the 9700 Area.

3.2.2 Evaluation Criteria for Environmental Consequences

Potential impacts regarding land use focus on incompatibilities that either already exist at the study area or would arise as a result of the proposed action, namely any activities associated with construction. A significant incompatibility would be one that threatens the sustainability of the military mission or puts the public at risk. For this action, selection standards established that the proposed study area be within a compatible land use area. However, site grading and excavation could result in the spread of soil contamination and impact the ability of the Air Force to use the land for its intended purpose.

3.2.3 Proposed Action

The Proposed Action is sited within an area of compatible land use on base, and construction would not result in changes to the surrounding off-base community land use. At 0.75 mile northeast, the nearest residential areas are sufficiently far away to preclude any issues that would constitute an incompatible land use. The primary issue is that construction activities at the Silver Flag location have the potential to disturb TU539P-Sub, resulting in further contamination, and affecting the ability of the Air Force to use the site. In recognition of this potential issue, Tyndall AFB has identified detailed guidelines governing all work within TU539P-Sub, including testing all excavated soils, which would then be characterized, stored, handled, transported, and disposed of according to hazardous waste laws and regulations. Detailed procedures are discussed in Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, and in Appendix B.

Tyndall AFB coordinates existing and future land use planning with Bay County to ensure compatibility between both parties (Bay County, 2021). Therefore, implementation of the Proposed Action would not result in significant impacts on land use.

3.2.4 No Action Alternative

Under the No Action Alternative, construction at the Silver Flag location would not occur. There would be no change or impact on existing land use on Tyndall AFB or within the surrounding community. Tyndall AFB and Bay County would continue to cooperate with regard to other actions that could affect land use compatibility (Bay County, 2021).

3.3 Earth Resources

Earth resources generally consist of soils and underlying geological structures such as sedimentary rock formations that may extend hundreds of feet in depth. The Proposed Action would have no effect on the overall geology of the study area, including rock layers and large-scale surface topography. Therefore, the discussion of earth resources is focused on soils in the project area, including the potential for erosion and associated effects. Disturbance of one acre or more of total land area requires a Construction General Permit (i.e., stormwater construction permit) under the National Pollutant Discharge Elimination System (NPDES), as well as preparation of a stormwater pollution prevention plan (SWPPP). Excavation and construction work in areas with potentially contaminated soil, including work within Environmental Restoration Program sites, requires implementation of management guidelines or land use controls, as applicable.

3.3.1 Existing Conditions

A total of 20 soil types are present on Tyndall AFB (Air Force, 2020e). These soils are generally sandy, acidic, poorly drained, and occur near the water table. The study area for earth resources includes the project area at Silver Flag. Soils in the study area consist predominantly of Pottsburg-Pottsburg wet sand, with lesser amounts of Leon sand (Natural Resource Conservation Service, 2022). Characteristics of these soil types are provided in Table 3-4. Contaminated soil in the project area occurs within Environmental Restoration Program Site TU539P-Sub, and contamination studies for PFAS are ongoing; see Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, and Appendix B.

Table 3-4. Soil Types in the Study Area

Soil Type	Description
Pottsburg-Pottsburg, wet, sand	Very deep, poorly drained, rapid permeability and negligible surface runoff, 0–2 percent slope, not prone to ponding or flooding, very susceptible to wind erosion
Leon sand	Very deep, poorly drained, rapid permeability and high-surface runoff, 0–2 percent slope, not prone to ponding or flooding, very susceptible to wind erosion

(Natural Resource Conservation Service, 2022)

3.3.2 Evaluation Criteria for Environmental Consequences

Activities were evaluated in the context of soil erosion and contaminant transport that may potentially occur because of ground disturbance and the addition of impervious surfaces. Generally, erosion and the associated sediment and contaminant transport can cause ground instability and impact sensitive features such as wetlands and other aquatic areas. Wetlands and surface waters occur within and adjacent to the project area (Air Force, 2021d); refer to Section 3.4, Water Resources, for a description of wetlands and other water resources.

3.3.3 Proposed Action

Potential impacts from soils in the context of the Proposed Action includes erosion and associated effects such as siltation and contaminant transport. Erosion caused by human activities may occur at rates much greater than erosion caused by natural conditions and may have detrimental effects on ecosystems. The susceptibility of soil to erosion depends on factors such as soil composition and texture, presence of vegetation, and the slope of the affected area.

Site preparation and construction activities could directly disturb up to 4.2 acres of soil (Table 2-1). Erosion of exposed soil resulting from rain, wind, and stormwater runoff could affect off-site areas, including wetlands and surface waters. Sedimentation of such aquatic features could affect hydrology and ecosystem functions. The potential for erosion would be decreased by the overall moderate slope of the study area as well as the permeability of the soils present. In addition, Tyndall AFB would obtain a stormwater construction permit from the FDEP prior to construction. The construction contractor would develop a SWPPP, which would identify erosion prevention and control measures that would be required during site preparation and construction activities.

Completion of the Proposed Action would result in the addition of about 74,160 square feet of new impervious surfaces including pavements, buildings, and other infrastructure. Additional impervious surface generally increases the amount and velocity of stormwater runoff, increasing the erosion potential. Stormwater runoff may also convey contaminants, such as oil leaked from vehicles onto the soil or into wetlands and surface waters. However, stormwater drainage and management features (e.g., site grading

to direct runoff to a stormwater management system) would be included in the project design. An approximate half-acre stormwater management area would be included as part of the Proposed Action.

Contaminated and potentially contaminated soil in the study area would be managed according to TU539P-Sub guidelines and a Memorandum of Understanding established between the Air Force and FDEP; see also Appendix B (Tyndall AFB, 2021; Air Force, 2021b). Soil that exceeds FDEP's provisional soil cleanup target levels would not be transported off the installation. Soil that does not meet Air Force screening criteria would be managed in accordance with contract requirements and applicable laws and regulations. Refer to Section 2.3.1 and Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, for additional information on soil contaminants and associated management requirements.

In summary, based on the above discussion, there would be no significant impacts on earth resources with implementation of the Proposed Action.

3.3.4 No Action Alternative

Under the No Action Alternative, construction and associated soil disturbance would not occur. There would be no related effects, including increased potential for erosion, sedimentation, and associated impacts on wetlands and surface waters. Stormwater runoff in developed areas of the site would continue to be directed to the existing stormwater management system. There would be no potential for disturbance of contaminated soil in Environmental Restoration Program Site TU539P-Sub. There would be no significant impacts on earth resources under the No Action Alternative.

3.4 Water Resources

Water resources include groundwater, surface waters, wetlands, floodplains, and coastal resources. Groundwater is subsurface water that occurs in the saturated zone below the water table, and it is stored in aquifers. Surface water is any body of water at land's surface and includes natural features such as wetlands, streams, ponds, bays, and oceans. Man-made surface waters include drainage ditches, impoundments, and stormwater catchments. The final "Revised Definition of 'Waters of the United States'" rule was published in the *Federal Register* on January 18, 2023, with an effective date of March 20, 2023. Broadly defined, the "Waters of the United States" (WOTUS) include traditional navigable waters, the territorial seas, interstate waters; impoundments of WOTUS; certain tributaries and wetlands associated with or adjacent to traditional navigable waters, the territorial seas, interstate waters; impoundments of WOTUS; and intrastate lakes and ponds, streams, or wetlands not previously identified in the rule that meet either the relatively permanent standard or the significant nexus standard.

In Florida, sovereignty submerged lands include, but are not limited to, tidal lands, islands, sandbars, shallow banks, and lands waterward of the ordinary or mean high water line, beneath navigable freshwater or beneath tidally influenced waters.

Wetlands include areas that are inundated or saturated by water at a frequency and duration sufficient to support vegetation adapted for saturated soil conditions. Floodplains are lowland areas adjacent to surface waters that are subject to flooding during periods of high-water discharge. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood in any given year. The 500-year floodplain is the area that has a 0.2 percent chance of inundation by a flood in any given year. Coastal resources include transitional and intertidal areas, salt marshes, islands, floodplains, wetlands, estuaries, reefs, and beaches, as well as the natural resources occurring within these coastal waters and adjacent shore lands.

Applicable regulations for water resources are discussed in the following paragraphs.

Clean Water Act. The Clean Water Act, as amended, regulates point and non-point source pollutant discharges into navigable WOTUS. Per Section 402, the USEPA controls pollutant discharges through the NPDES permit program. A Water Quality Certification is required for projects with discharge into a WOTUS, pursuant to Section 401. Discharge of dredged or fill material into wetlands is subject to Section 404. As of December 2020, the USEPA transferred Section 404 permitting authority to the State of Florida for certain WOTUS (i.e., certain inland wetlands, smaller rivers, and streams); the U.S. Army Corps of Engineers (USACE) retains jurisdiction over most navigable WOTUS (i.e., larger rivers and coastal waters) and the wetlands adjacent to those waters.

Environmental Resource Permit. An Environmental Resource Permit is required for dredge and fill activities affecting wetlands and surface waters of the State of Florida, as well as projects with stormwater impacts, pursuant to Part IV of Florida Statute Chapter 373, *Management and Storage of Surface Waters*, and Florida Administrative Code Chapter 62-330, *Environmental Resource Permitting*.

EO 11990, Protection of Wetlands. EO 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in their activities. EO 11990 limits construction in wetlands and allows for public review, which is accomplished through the NEPA process. Early notice of the Proposed Action was provided in accordance with EO 11990 (see Section 1.3.2 and Appendix A), which requires early notice for actions that could affect wetlands.

EO 11988, Floodplain Management. EO 11988 requires federal agencies to avoid adverse impacts associated with the occupancy and modification of floodplains and to avoid floodplain development whenever possible.

Coastal Zone Management Act. The CZMA requires all federal agency activities that affect any land or water use, or natural resource of the coastal zone, be conducted in a manner consistent, to the maximum extent practicable, with the enforceable policies of the National Oceanic and Atmospheric Administration-approved state management program. This includes protecting natural resources and managing coastal development. The entire landmass of Florida is within the coastal zone; therefore, the Proposed Action would take place within or otherwise may affect the jurisdictional concerns of the FDEP. Tyndall AFB has prepared a consistency determination with respect to Florida's Coastal Zone Management Program under the federal CZMA, included in Appendix D.

Energy Independence and Security Act of 2007. Section 438 identifies requirements to limit the off-site impacts of stormwater runoff from federal development projects. Regardless of location, if more than 5,000 square feet of land is being redesigned, reconfigured, or reconstituted in any manner that diverges from that area's current use and composition, Section 438 would be applicable.

Resource Conservation and Recovery Act (RCRA). RCRA regulates the identification, transportation, treatment, storage, and disposal of solid and hazardous wastes (see also Section 3.6, Hazardous Materials and Wastes and Contaminated Sites).

3.4.1 Existing Conditions

The study area for the fire R&D facility encompasses groundwater resources, surface waters, wetlands, floodplains, and coastal areas (with surface water and floodplains shown in Figure 3-1 and wetlands shown in Figure 3-2). See Section 3.3, Earth Resources, and Section 3.5, Biological Resources, for discussions of the soils and sediment and the species and habitats, respectively, that are found in association with water resources.

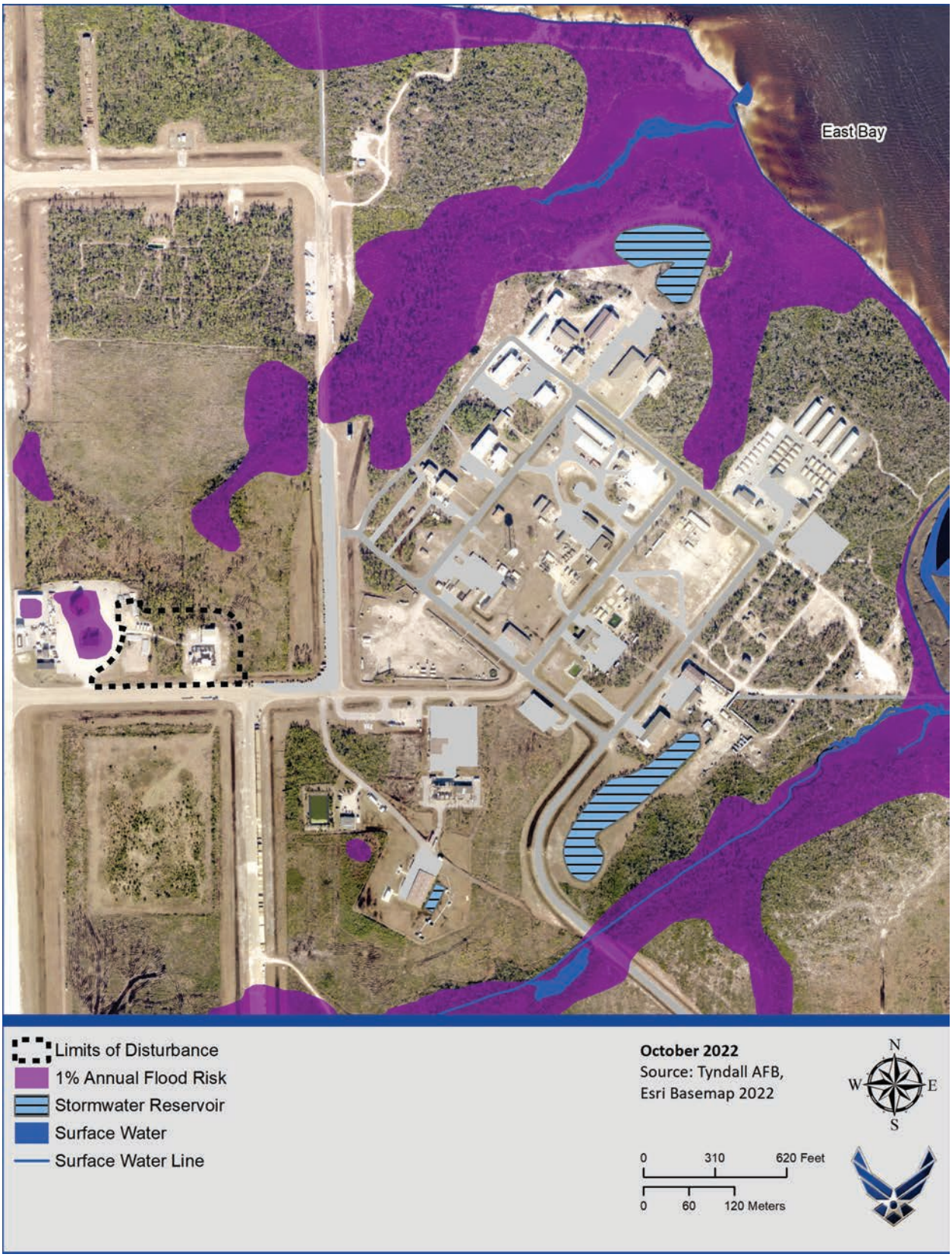


Figure 3-1. Surface Water and Floodplains in the Study Area

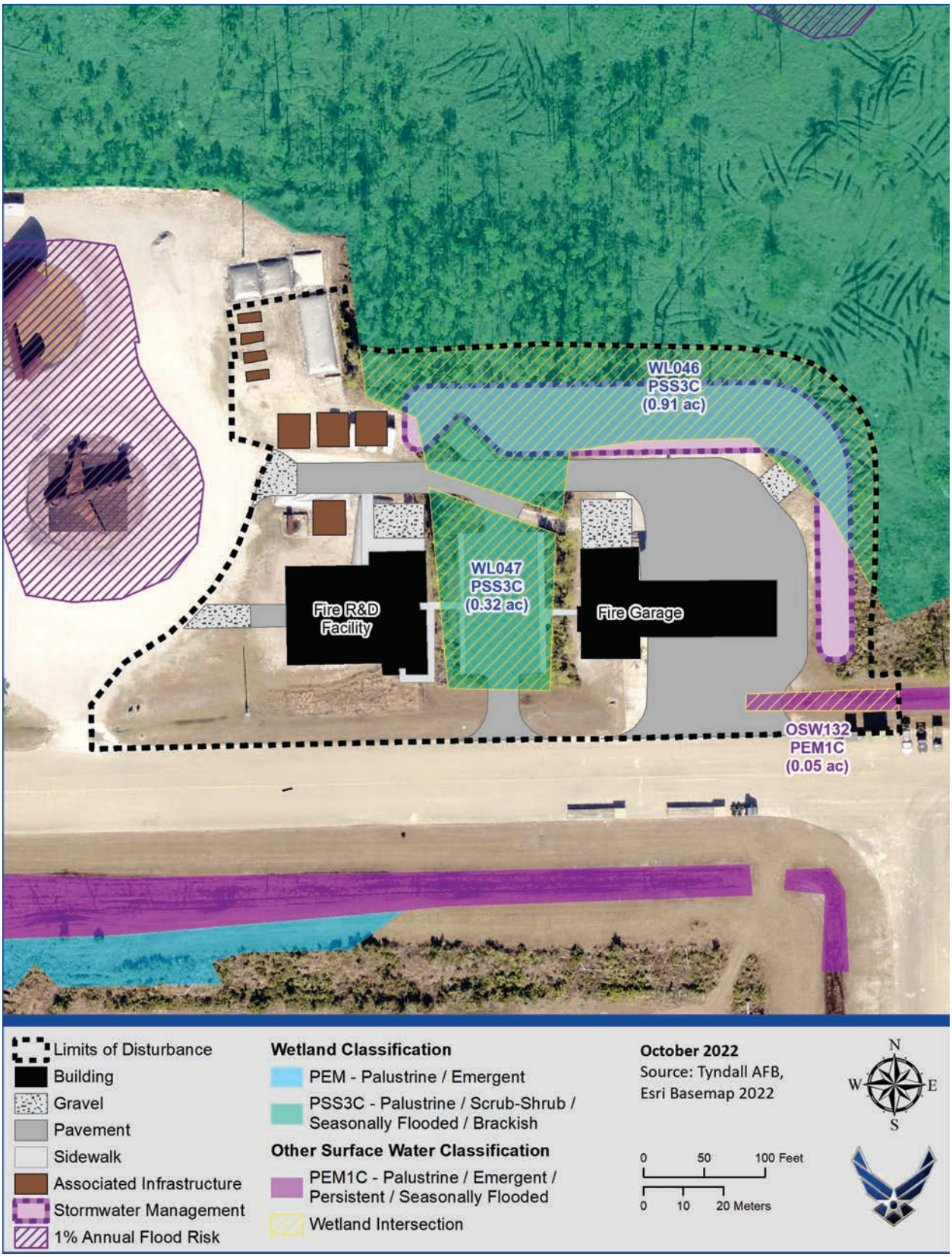


Figure 3-2. Wetlands and Water Resources in the Immediate Study Area

The surficial aquifer at Tyndall AFB ranges in thickness from approximately 50 to 100 feet below ground surface, and the regional Floridan Aquifer is approximately 250 to 350 feet below the surface (Air Force, 2020e). The study area is within TU539P-Sub; the surficial aquifer has known PFAS contamination and is undergoing further investigations. The primary source of potable water for Tyndall AFB is Deer Point Lake Reservoir. Surface water at the site drains to East Bay. East Bay is listed on Florida's Comprehensive Verified List for high levels of total nitrogen and bacteria in shellfish (FDEP, 2022).

Classified as Zone X (unshaded)-area of minimal flood hazard, the Silver Flag site is above the 500-year flood level. However, portions of the 100-year floodplain (i.e., 1 percent annual flood risk) are found nearby in the fire pit area (Figure 3-1). The area encompassing the fire pits is already developed. An additional area of 100-year floodplain is present approximately 310 feet north of the limits of disturbance.

The site includes 1.23 acres of wetlands and 0.05 acre of other surface waters (Figure 3-2 and Table 3-5). The other surface water body (noted as "OSW" in Table 3-5) within the study area does not connect to, nor has it been excavated within, federally jurisdictional wetlands. It is an intermittently flooded, upland-cut drainage ditch that is part of the stormwater drainage system. The affected wetlands are subject to regulation under Section 404 of the Clean Water Act; however, they are located greater than 300 feet from waters subject to the ebb and flow of tide, so they fall with State "assumed" waters and are therefore under the regulatory authority of the State of Florida (see Appendix A, USACE email dated January 6, 2023).

Table 3-5. Wetlands and Other Surface Waters in the Limits of Disturbance

Wetland ID Number	Type of Resource	USFWS Classification	FLUCFCS	Acres in Direct Construction Footprint	Acres in Limits of Disturbance
WL046	Wetland	PSS3C[1]	625[2]	0.50	0.91
WL047	Wetland	PSS3C[1]	625[2]	0.21	0.32
OSW132	Surface Water	PEM1C[3]	510[4]	0.01	0.05

(Air Force, 2021d)

Key: FLUCFCS = Florida Land Use Cover and Forms Classification System; OSW = other surface water; USFWS = United States Fish and Wildlife Service; WL = wetland.

Notes:

[1] PSS3C = palustrine, nontidal, dominated by scrub-shrub with broad-leaved evergreens, seasonally flooded.

[2] 625 = hydric pine flatwoods.

[3] PEM1C = palustrine, nontidal, dominated by emergent perennial persistent plant species, seasonally flooded.

[4] 510 = streams and waterways.

3.4.2 Evaluation Criteria for Environmental Consequences

Impacts were evaluated in terms of degree, duration, and proximity to water resources, analyzing potential sediment, contaminant, and hydrologic effects, and identifying impacts that could result in regulatory violations.

A significant, adverse impact on water resources would alter water quality, hydrology, or aquatic habitat to the degree that the long-term natural functions and values of the resource would be diminished. Significant adverse impacts would also exist if the action exceeded federal, state, or local water quality standards; contaminated drinking water supplies; resulted in noncompliance with EOs related to wetlands or floodplains; or resulted in failure to meet the requirements of the CZMA. Analysis of impacts on coastal resources is part of the CZMA consistency determination in Appendix D.

3.4.3 Proposed Action

The Proposed Action would result in direct impacts on small areas of wetlands and other surface waters, with the potential to affect the water quality and hydrology of other water resources within the study area. Permits for impacts on wetlands and other surface waters would be required.

Proposed construction activities would not involve withdrawals from, or discharges to, surface water bodies or groundwater. Groundwater within the surficial aquifer may be encountered during certain types of construction activities such as excavation. The groundwater has known PFAS contamination; dewatering, if required, would be handled according to guidelines established for TU539P-Sub to protect health and safety (see also Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, and Appendix B).

Up to 4.2 acres could be cleared and graded for construction and stormwater drainage, with approximately 74,160 square feet of impervious surfaces (i.e., structures, pavements, and associated infrastructure). To address the potential for excess sedimentation and other impacts on water resources due to stormwater runoff, the proponent would obtain all necessary permits and implement permit requirements and best management practices, such as stormwater ponds and silt fencing. Total site disturbance exceeds one acre, so a NPDES permit would be required. As discussed in Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, and Appendix B, hazardous materials and waste and contaminated media would be managed in accordance with applicable environmental compliance regulations, Tyndall AFB environmental management plans, and the guidelines established for all construction activities near or within TU539P-Sub. Similarly, operations would follow Tyndall AFB spill prevention and containment measures and other requirements described in Section 3.6 and Appendix B to minimize the potential for contaminated runoff and PFAS to affect wetlands, surface waters, and groundwater. See also Section 3.3, Earth Resources, and Section 3.5, Biological Resources, for discussion of impacts on those resources found in association with water resources.

No 100-year or 500-year floodplains occur within the project boundaries, so there would be no direct impacts on floodplains. No indirect impacts on floodplains are anticipated because off-site impacts from stormwater runoff would be minimized through the design of drainage systems to properly convey and store stormwater flows, and through compliance with local floodplain management policies and regulations, which promote designs to minimize flood impacts.

With the Proposed Action, approximately 0.71 acre of hydric pine flatwood wetlands would be directly affected by impervious surfaces and stormwater infrastructure; an additional 0.52 acre of hydric pine flatwood wetlands is also within the limits of disturbance (see Table 3-5). Approximately 0.01 acre of other surface waters would be directly affected, and another 0.04 acre of other surface waters may be disturbed.

As with many of the wetlands at Tyndall AFB, the vegetative structure and hydrological functioning of the wetlands at this site have been altered by Hurricane Michael wind shear and flooding and subsequent timber harvest/salvage operations (Air Force, 2020e). Vegetative alterations have reduced the value of the wetlands in the study area for wildlife habitat and stormwater treatment (for excess nutrients and chemicals), and the hydrologic alterations have had unknown impacts on functioning for flood control. The proximity of the affected wetlands to current development and human activity, as well as likely PFAS contamination, has also limited the value of these wetlands to wildlife. The surface water area that would be affected is part of a ditch system that serves to drain stormwater runoff; the ditch has limited habitat value.

Most of the direct impacts on wetlands would be associated with the conversion to stormwater infrastructure. Although the new stormwater infrastructure would not function as a natural wetland, it would provide flood control and some degree of wildlife habitat and sedimentation control. However, the

wetland areas and other surface waters replaced by impervious surface would become a source of stormwater runoff. Although it would no longer function as a natural wetland, the new stormwater infrastructure may provide some of the same functional benefits, such as stormwater storage and treatment. There also is the potential for indirect impacts on wetlands and surface waters from runoff during and after construction, including excess sedimentation, chemical contamination, and altered hydrology. During design and permitting, efforts would be made to minimize impacts on both jurisdictional and non-jurisdictional wetlands and other surface waters to the greatest extent practicable. Mitigation would be required to offset impacts on jurisdictional wetlands. Wetland impacts that result from the construction of this project would be mitigated to satisfy all mitigation requirements of Part IV of Chapter 373 Florida Statutes, Chapter 62-330 Florida Administrative Code, and Chapter 62-331 Florida Administrative Code. Compensatory mitigation would be completed through mitigation options that satisfy state and federal requirements.

Impacts on water resources would be minimized in accordance with permit requirements, and the following management actions:

- Acquire all necessary wetland and water resource permits for the Proposed Action, including, but not limited to a NPDES permit, Environmental Resource Permit, State 404 Program Permit (impacted wetlands are state-assumed waters), and Clean Water Act Section 401 water quality certification.
- Provide mitigation, as determined by regulatory agencies during the permitting process and to be verified during final design, for direct impacts on wetlands and other surface waters.
- Conduct all activities in accordance with the procedures identified in Appendix B pertaining to TU539P-Sub.
- Acquire required authorizations from the FDEP for wastewater collection/transmission systems and public drinking water system modifications.
- Wherever possible as determined by final design, use pervious surfaces for stormwater retention and treatment.
- Implement measures to reduce or eliminate the potential for eroded soils and contaminants from entering surface water bodies and groundwater (i.e., vegetated buffers, silt fencing).
- Conduct activities in accordance with the project spill prevention plan and clean up any fuel or oil spills per standard Air Force procedures.
- Revegetate exposed soils as quickly as possible after the completion of work.

In summary, the Proposed Action would not affect floodplains, and with implementation of the procedures identified in Appendix B pertaining to TU539P-Sub, potential impacts on groundwater resources would be minor. During design and permitting, efforts would be made to minimize impacts on all wetlands and surface waters to the greatest extent possible, and all necessary permits would be obtained. To offset impacts on affected jurisdictional wetlands and other surface waters, mitigation would be completed in accordance with permit requirements. Implementation of management actions and the requirements resulting from permits would minimize impacts associated with stormwater runoff. Therefore, with implementation of permit requirements and mitigations for the small area of affected wetlands, the Proposed Action would not result in significant impacts on groundwater, floodplains, surface waters, wetlands, or coastal resources.

3.4.4 No Action Alternative

Under the No Action Alternative, no construction would occur, and no direct impacts on wetlands or 100- or 500-year floodplains would occur. Operations at the temporary office trailer at Silver Flag, laboratory fire testing at the Air Force Civil Engineer East Facility in Building 1117, and the small-to medium-scale testing in Building 9500E are not expected to affect water resources, but there is the potential for runoff from large-scale fire testing in the Silver Flag area and from vehicles/equipment that are stored outside.

Operations would follow the spill prevention and containment measures and other requirements described in Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, and Appendix B to minimize the potential for contaminated runoff to affect wetlands, surface waters, and groundwater. Thus, the No Action Alternative would not result in significant impacts on water resources.

3.5 Biological Resources

3.5.1 Existing Conditions

3.5.1.1 Vegetation and Wildlife

Tyndall AFB is located within the East Gulf Coastal Plain physiographic province, and occupies two physiographic subdivisions: Gulf Coastal Lowlands, which is characterized by lagoons, barrier islands, coastal swamps, and marshes; and Flatwoods Forests. The base is situated on a peninsula bordered to the north and west by East Bay and to the south by St. Andrews Bay and St. Andrews Sound. Barrier islands separate St. Andrews Sound from the Gulf of Mexico.

The Tyndall AFB coastal landscape includes barrier islands, beaches, sand dunes, bayous, and tidal marshes. The interior landscape of Tyndall AFB includes well-drained, gently sloping uplands, poorly drained flatwoods, and permanent and ephemeral ponds and wetlands (Air Force, 2020e).

The Florida panhandle is a biodiversity hotspot with close to fifty imperiled species occurring in the region, many of which rely on longleaf pine forests. Historically, Tyndall AFB was composed of intact coastal ecosystems and upland longleaf pine ecosystems, but much of the vegetation has been altered by past human activity. Prior to Air Force ownership, much of the land was forested and clearcut. Since the 1960s, Tyndall AFB has used forestry practices to reforest parts of the installation. In 2018, Hurricane Michael caused catastrophic damage to the installation, including many of its natural resources and forest stands (Air Force, 2020e).

The study area for biological resources includes the proposed construction footprint in the Silver Flag area and the construction staging area.

Vegetation. The majority of Tyndall AFB consists of forested upland and wetlands. The dominant upland natural communities include tree plantations, coastal scrub, coastal uplands, mesic flatwoods, and wet flatwoods. The dominant wetland communities on Tyndall AFB include salt marshes, wet prairies, bogs, freshwater forested wetlands, and marshes (Air Force, 2020e).

The study area is composed of previously disturbed/developed land and 1.23 acres of wetlands. The previously developed land includes demolished building footprints, pavement, and gravel. The wetland area is on the north/northeast side of the study area. The wetlands, which are described in Section 3.4, are classified as hydric pine flatwoods wetlands. Flatwood communities are characterized by an open canopy of scattered pine trees with a shrubby understory that typically includes saw palmetto (*Serenoa repens*) and shrubs. Pine flatwoods include diverse groundcover assemblages dominated by wiregrass (*Aristida stricta*) other native warm season grasses, sedges, and other herbaceous species. Approximately 4,407 acres (15 percent) of Tyndall AFB is classified as the wet flatwoods natural community (Air Force, 2020e). The construction staging area has a few scattered trees.

Wildlife. Tyndall AFB supports a wide variety of mammals, birds, reptiles, amphibians, and fish. Wildlife occurring on Tyndall AFB are documented within the installation Integrated Natural Resources Management Plan (INRMP) (Air Force, 2020e). Common birds found on the installation include belted kingfisher (*Megaceryle alcyon*), great blue heron (*Ardea herodias*), great horned owl (*Bubo virginianus*), northern bobwhite (*Colinus virginianus*), and red-shouldered hawk (*Buteo lineatus*). Common mammal

species include white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis virginiana*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), eastern red bat (*Lasiurus borealis*), and Florida black bear (*Ursus americanus floridanus*). Common reptiles found on Tyndall AFB include black racer (*Coluber constrictor*), cottonmouth (*Agkistrodon piscivorus*), green anole (*Anolis carolinensis*), and six-lined racerunner (*Cnemidophorus sexlineatus*) (Air Force, 2020e).

3.5.1.2 Federal- and State-Listed Species

The Endangered Species Act of 1973 was enacted to "conserve threatened and endangered species and the ecosystems on which those species depend." The USFWS has legislative authority to list and monitor the status of species whose populations are considered imperiled. Regulations supporting this Act are codified and regularly updated in 50 CFR 17. A discussion of federally listed species with potential of occurring is included below.

According to the USFWS Information for Planning and Consultation (IPaC) database, retrieved October 17, 2022 (Project Code: 2023-0005323), twelve species listed as endangered, threatened, or candidate under the Endangered Species Act have the potential to occur within the study area, as provided in Table 3-6 and Appendix E. There is no critical habitat found within the study area (USFWS, 2023).

Several surveys for listed species have been conducted at Tyndall AFB by the USFWS, Florida Fish and Wildlife Conservation Commission (FWC), Florida Natural Areas Inventory (FNAI), Tyndall Natural Resources personnel, and environmental consulting firms. Of the species identified in the IPaC report for this Proposed Action, the following have been documented to occur at Tyndall AFB or surrounding waters: West Indian manatee (*Trichechus manatus*), eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*), Gulf sturgeon (*Acipenser oxyrinchus desotoi*), Godfrey's butterwort (*Pinguicula ionantha*), and telephus spurge (*Euphorbia telephioides*). Eastern indigo snake (*Drymarchon couperi*) and alligator snapping turtle (*Macrochelys temminckii*) have not been documented on Tyndall AFB but are known to occur in the region and/or appropriate habitat exists on the base (Air Force, 2020e).

The following species listed in the IPaC report have not been documented as either occurring or having the potential to occur at Tyndall AFB according to protected species surveys on the installation: wood stork (*Mycteria americana*), monarch butterfly (*Danaus plexippus*), Florida skullcap (*Scutellaria floridana*), Harper's beauty (*Harperocallis flava*), or white birds-in-a-nest (*Macbridea alba*) (Air Force, 2020e). Monarch butterfly was listed as a candidate species by USFWS in December 2020, after the latest INRMP update (signed in July/August 2020). The monarch butterfly is likely found on Tyndall AFB but was not included in previous protected species surveys or the INRMP, so it has not been previously documented.

The FWC maintains a list of threatened and endangered animal species, and the Florida Department of Agriculture and Consumer Services maintains a list of regulated plant species. The FNAI screening tool was used to determine rare state species occurrence information on and near the study area. According to the inventory, three state-listed species have been either documented or are likely to be found within a one-square-mile area that contains the study area; these species are also listed in Table 3-6.

During field reviews for a Wetlands Evaluation Report in 2021, the study area was assessed for the presence of, or potential use by, federal- and state-listed plant and animal species. All species included within the IPaC species list and the FNAI screening tool list were included in the investigation with the exception of West Indian manatee, eastern black rail, alligator snapping turtle, and Gulf sturgeon. None of these species were observed within the study area. Monarch butterfly was not included in the assessment, but southern milkweed was included. No southern milkweed was observed within the study area during the October 2020 and February 2021 field reviews (Air Force, 2021d).

Summaries of the protected species that have the potential to be present in the study area are included following Table 3-6.

Table 3-6. Federal- and State-Listed Species with Potential to Occur in the Study Area

Species	Federal Status	State Status	Description of Preferred Habitat	Potential to Occur in Study Area
Mammals				
Florida black bear (*Ursus americanus floridanus*)	—	FBBCR	Forested wetlands, varied.	Yes
West Indian manatee (*Trichechus manatus*)	FT	—	Marine, brackish, and freshwater coastal and riverine systems; prefer nearshore areas with underwater vegetation.	None
Birds				
Eastern black rail (*Laterallus jamaicensis* ssp. *jamaicensis*)	FT	—	Salt, brackish, and freshwater marsh habitat with dense vegetative cover. Along Gulf Coast, found in wetland zones with shrubby vegetation.	Unlikely
Wood stork[1] (*Mycteria americana*)	FT	—	Nesting habitat of mixed hardwood swamps, sloughs, mangroves, and cypress stands. Forage habitat of freshwater and estuarine wetlands limited to depths of less than 10–12 inches.	Unlikely; not documented on Tyndall AFB
Reptiles				
Alligator snapping turtle (*Macrochelys temminckii*)	FP	SSSC	Deep water of streams, rivers, lakes, and swamps. Nests on land.	Unlikely; not documented on Tyndall AFB
Eastern indigo snake (*Drymarchon couperi*)	FT	—	Pine flatwoods, hardwood forests, moist hammocks, and areas around cypress swamps. Often use gopher tortoise burrows.	Unlikely; not documented on Tyndall AFB
Fish				
Gulf sturgeon (*Acipenser oxyrinchus* (=*oxyrhynchus*) *desotoi*)	FT	—	Salt- and freshwater habitats; brackish and saltwater in the fall and winter months, and freshwater rivers to spawn and remain through summer months.	None
Insects				
Monarch butterfly (*Danaus plexippus*)	FC	—	Eggs are laid on milkweed host plant, which is then used as sole food source of their larva. Adult butterflies forage on a variety of flower species.	Yes
Plants				
Florida skullcap (*Scutellaria floridana*)	FT	SE	Wet longleaf pine flatwoods and wet prairie, grassy seepage bog communities at edge of forested or shrubby wetlands. Fire dependent.	Unlikely; not documented on Tyndall AFB

Species	Federal Status	State Status	Description of Preferred Habitat	Potential to Occur in Study Area
Godfrey's butterwort (*Pinguicula ionantha*)	FT	SE	Herbaceous bogs, transition zones, longleaf pine savannas, and pine flatwoods.	Yes
Harper's beauty (*Harperocallis flava*)	FE	SE	Gentle slopes, seepage savannas between pinelands, and cypress swamps to open roadside depressions.	Unlikely; not documented on Tyndall AFB
Pinewoods aster (*Eurybia spinulosa*)	—	SE	Mesic to wet pine flatwoods, savannas.	Yes
Telephus spurge (*Euphorbia telephioides*)	FT	SE	Typically, scrubby oaks on low sand ridges near the coast, but has been reported from xeric to mesic pine flatwoods and in scrubby pinelands dominated by wiregrass.	Unlikely
White birds-in-a-nest (*Macbridea alba*)	FT	SE	Gulf coastal lowlands with poorly drained soils near the mouth of the Apalachicola River. Also found in savanna and dryer mesic flatwoods with longleaf pine and runner oaks.	Unlikely; not documented on Tyndall AFB

(USFWS, 2023; USFWS, n.d.[a]; USFWS, n.d.[b]; FWC, n.d.[c]; FWC, n.d.[a]; FWC, n.d.[b]; USFWS, n.d.[c]; USFWS, 2019; USFWS, 2018; Air Force, 2020e) (USFWS, 2021b; USFWS, 2020; FNAI, 2022; Florida Department of Agriculture & Consumer Services, 2021)
Key: AFB = Air Force Base; FBBCR = Florida Black Bear Conservation Rule; FC = Federal-Candidate; FE = Federal-Endangered; FP = Federal-Proposed; FT = Federal-Threatened; SE = State-Endangered; SSSC = State Species of Special Concern.
Note: [1] The wood stork was not included in the current IPaC report (included in Appendix E), but was listed in a previous IPaC report generated for this project, so it has been kept in the analysis to maintain comprehensive consideration of effects on protected species with potential to occur within the study area.

Florida Black Bear. Florida black bear is protected and managed by the FWC pursuant to the Florida Black Bear Conservation Rule 68A-4.009, Florida Administrative Code. It can be found in a wide variety of forested communities statewide. Forested wetlands are important habitat for diurnal cover. Florida black bears commonly occur on Tyndall AFB and are managed according to the installation INRMP.

West Indian Manatee. The Florida manatee, a subspecies of the West Indian manatee, is present throughout the Gulf of Mexico and Atlantic Ocean coastlines during warm months and during migration. During winter months, manatees are generally restricted to peninsular Florida. In summer months, they are occasionally observed in the bays and Gulf of Mexico adjacent to Tyndall AFB (Air Force, 2020e).

Eastern Black Rail. Eastern black rail can be found in a variety of salt, brackish, and freshwater marsh habitats, and require dense vegetation that allows movement under the canopy. Along the Gulf Coast, eastern black rails can be found in higher elevation wetland zones with some shrubby vegetation (USFWS, n.d.[b]). Eastern black rails have been observed on Tyndall AFB (Air Force, 2020e).

Wood Stork. The wood stork is a large, long-legged wading bird that stands over three feet tall with a five-foot wingspan. Wood storks are wetland dependent and use a variety of freshwater and estuarine wetlands for nesting, feeding, and roosting. Nesting colonies are often large, with 100–500 nests, and typically form from February to March in northern Florida. In Florida, nesting habitat consists of mixed hardwood swamps, sloughs, mangroves, and cypress stands. Freshwater colony sites must remain

inundated throughout the nesting cycle to protect against predation and abandonment. Forage habitat includes a variety of freshwater and estuarine wetlands limited to depths of less than 10–12 inches (FWC, n.d.[c]). Wood storks have not been observed on Tyndall AFB (Air Force, 2020e).

Alligator Snapping Turtle. Alligator snapping turtles are generally found in the deeper water of large rivers and their tributaries, but they can be found in a wide variety of aquatic habitat, including small streams, canals, swamps, and ponds. In Florida, optimum alligator snapping turtle habitat is swamp forests comprised of bald cypress and tupelos associated with flooded channels (USFWS, 2021a). This species nests on land. Alligator snapping turtles are proposed for listing as threatened under the Endangered Species Act. There have been no documented sightings of alligator snapping turtles on Tyndall AFB, although suitable habitat is available (Air Force, 2020e).

Eastern Indigo Snake. The eastern indigo snake is a large, conspicuous, slow-moving, and docile snake. The species uses sandhills during winter months and often occupies the burrows of gopher tortoise and other species. Riparian areas are frequently used in the summer months. There have been no documented sightings of eastern indigo snake on Tyndall AFB, although suitable habitat is available (Air Force, 2020e).

Gulf Sturgeon. The Gulf sturgeon is an anadromous fish occurring in most major river systems from the Pearl River, Louisiana, to the Suwannee River, Florida, as well as in marine waters from the central and eastern Gulf of Mexico to Florida Bay offshore. It occurs predominantly in the northeastern Gulf of Mexico. Sturgeon from multiple river systems have been detected overwintering in the marine nearshore water off Tyndall AFB. Critical habitat for Gulf sturgeon extends from the Tyndall AFB Gulf of Mexico coastal shoreline to one nautical mile offshore. Tyndall AFB does not actively manage Gulf sturgeon but does use best management practices to manage stormwater sediment, nutrients, and other forms of pollution that could affect the fish and its habitat (Air Force, 2020e).

Monarch Butterfly. Monarch butterflies are dependent on the milkweed plant (primarily *Asclepias* spp.) to lay their eggs, and adult butterflies forage on a variety of flower species. There have not been surveys for monarch butterfly on Tyndall AFB, but southern milkweed (*Asclepias viridula*) is present on the installation (Air Force, 2020e). Southern milkweed is endemic to the Florida panhandle and is typically found in wet flatwoods, prairies, seepage slopes, and pitcher plant bogs (FNAI, 2018). Southern milkweed has not been observed within the study area (Air Force, 2021d).

Florida Skullcap. Florida skullcap is a perennial herb endemic to the Florida panhandle. It has only been found within four counties, and its only known occurrence in Bay County is in Lathrop Bayou (located approximately 1.5 miles away from the eastern end of Tyndall AFB across East Bay). The habitat for Florida skullcap is wet longleaf pine flatwoods and wet prairie, within grassy seepage bog communities at the edge of forested or shrubby wetlands (USFWS, 2019). Florida skullcap has not been found on Tyndall AFB (Air Force, 2020e).

Godfrey's Butterwort. Godfrey's butterwort is a carnivorous plant species endemic to the Florida panhandle. It inhabits herbaceous bogs embedded in longleaf pine savannas and pine flatwoods (USFWS, 2018). It is known to occur at twelve locations on Tyndall AFB (Air Force, 2020e). Tyndall AFB manages for Godfrey's butterwort by conducting annual surveys to monitor populations, using prescribed fire to support habitat, and removing the dense shrub layer to enhance wetland habitat (Air Force, 2020e).

Harper's Beauty. Harper's beauty occurs on gentle slopes, seepage savannas between pinelands, and cypress swamps to open roadside depressions. There is only one known population of Harper's beauty in Bay County, located on private property (USFWS, 2022). Harper's beauty has not been found on Tyndall AFB (Air Force, 2020e).

Pinewoods Aster. The pinewoods aster is a perennial herb found in mesic to wet pine flatwoods, seepage slopes, or savannas. It has been observed on Tyndall AFB (Air Force, 2020e).

Telephus Spurge. Telephus spurge is a perennial herbaceous plant species endemic to coastal Bay, Franklin, and Gulf Counties on the Florida panhandle. It occurs in a variety of habitats ranging from xeric scrub to mesic pine flatwoods, along disturbed sandy roads, and less commonly in wetlands with seepage slope species. Telephus spurge has been documented at three locations on Tyndall AFB (USFWS, 2021b). The on-base populations are monitored and managed annually (Air Force, 2020e).

White Birds-in-a-Nest. White birds-in-a-nest is restricted to Gulf coastal lowlands near the mouth of the Apalachicola River, which contains grassy habitat on poorly drained, infertile soils. The plant also occurs in dryer, mesic flatwoods sites with longleaf pine and runner oaks. In Bay County, all known populations of white birds-in-a-nest are considered extirpated except for one population on Lathrop Island (located approximately 1.5 miles away from the eastern end of Tyndall AFB, across East Bay) (USFWS, 2020). White birds-in-a-nest has not been found on Tyndall AFB (Air Force, 2020e).

3.5.1.3 Migratory Birds and Bald Eagles

Migratory birds, as listed in 50 CFR 10.13, are ecologically and economically important. The Migratory Bird Treaty Act of 1918 (Public Law 65-186; 16 U.S.C. 703 et seq.) protects migratory birds by prohibiting, including but not limited by, the following: It is unlawful by any means or in any manner to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds, their nests, eggs, parts, or products at any time without the appropriate permit and provides enforcement authority and penalties for violations.

According to the USFWS IPaC database report, retrieved October 17, 2022 (Project Code: 2023-0005323; Appendix E), there are ten migratory birds listed as USFWS Birds of Conservation Concern for the study area: American kestrel (*Falco sparverius paulus*), black skimmer (*Rynchops niger*), brown-headed nuthatch (*Sitta pusilla*), chimney swift (*Chaetura pelagica*), red-headed woodpecker (*Melanerpes erythrocephalus*), ruddy turnstone (*Arenaria interpres morinella*), short-billed dowitcher (*Limnodromus griseus*), swallow-tailed kite (*Elanoides forficatus*), willet (*Tringa semipalmata*), and Wilson's plover (*Charadrius wilsonia*) (USFWS, 2023). Of the migratory bird species listed in the IPaC report, American kestrel and black skimmer have been observed on Tyndall AFB (Air Force, 2020e).

Under the Bald and Golden Eagle Protection Act of 1940 (Public Law 87-884; 16 U.S.C. 668–668d), it is unlawful to take (i.e., pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb), possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or in any manner any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), alive or dead, including their parts, eggs, nests, or young, without the appropriate permit. Bald eagles are regularly observed on Tyndall AFB during winter months. The installation has abundant nesting habitat available and conducts annual bald eagle nest surveys. A minimum 330-foot buffer is maintained around active nests (Air Force, 2020e).

3.5.2 Evaluation Criteria for Environmental Consequences

Impacts on biological resources would be considered adverse if loss or alteration of a species or habitats would result from the Proposed Action or associated construction. Impacts are evaluated in terms of degree of loss and duration of impacts. A significant, adverse impact on biological resources would alter habitat to the degree that results in reductions in population size or distribution of a species of high concern over the long term. Impacts on biological resources would also be considered significant if the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered

species, or if it would result in the destruction or adverse modification of federally designated critical habitat.

As a requirement under the Endangered Species Act, federal agencies must provide documentation ensuring that agency actions do not adversely affect the existence of any federally threatened or endangered species. The Endangered Species Act requires that all federal agencies avoid "taking" federally threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the Endangered Species Act establishes a consultation process with USFWS that ends with USFWS concurrence or a determination of the risk of jeopardy from a federal agency project.

3.5.3 Proposed Action

The Proposed Action would involve construction on approximately 4.2 acres of land (Table 2-1). Much of the Silver Flag site is previously disturbed and contains little to no habitat for the species listed in Table 3-6. The northern portion of the site would affect wetlands, which are further discussed in Section 3.4 and below.

The construction staging area is mostly disturbed with a few scattered trees, and the Proposed Action would have negligible effects on biological resources within the staging area site.

3.5.3.1 Vegetation and Wildlife

The Proposed Action would have adverse effects on vegetation from the permanent loss of wetland habitat. The direct loss of habitat would potentially affect burrows or nests, as well as forage or cover areas used by a range of wildlife. Species that currently inhabit or use the wetlands that would be lost under the Proposed Action would likely relocate to adjacent similar habitat, resulting in negligible effects on overall species populations on the installation. The installation has 4,407 acres of wet flatwoods, and the loss of up to 1.23 acres of hydric (wet) pine flatwoods would represent a very small amount of the total wet flatwood habitat on the installation. There is potential for wildlife mortality in the proposed project area during construction activities, most likely involving smaller, slow-moving species such as insect, rodent, amphibian, and reptile species. Disturbances from noise generated by construction activity may disrupt wildlife temporarily but would be intermittent and would not have long-term effects on wildlife. The Proposed Action would not change long-term noise levels or introduce different types of equipment within the Silver Flag fire training area, and as a result would not result in adverse noise impacts on wildlife.

Site construction would disturb soils that are potentially contaminated with PFAS (see Section 3.3, Earth Resources, and Section 3.6, Hazardous Materials and Wastes and Contaminated Sites, for additional information on soil contaminants and associated management requirements). Contaminated soil would be managed in accordance with applicable laws and regulations. The addition of new impervious surfaces on the site has potential to affect stormwater runoff, which could affect the wetland habitat adjacent to the site. However, site designs include stormwater drainage and management features, including a half-acre stormwater management area, which would minimize potential impacts on the local wetlands and vegetation. As a result, runoff from the Proposed Action would not affect surrounding vegetation or habitat.

Based on the above discussion, there would be no significant impacts on vegetation or wildlife with implementation of the Proposed Action.

3.5.3.2 Federal- and State-Listed Species

The construction of the proposed facilities would have minor potential to affect, but is not likely to adversely affect, listed species that may occur on the site. No critical habitat has been designated within the study area (USFWS, 2022a). The previously disturbed and developed land lacks suitable habitat. The loss of wetlands on the northern end of the site poses minor potential for species impacts, although no federally protected species are known to be present at the site. If federally protected species are discovered on the site during construction, formal consultation with USFWS would be initiated to minimize impacts on the species.

The West Indian manatee and Gulf sturgeon are not present on or near the site; the nearest waterway is located a half-mile from the Silver Flag site, and there would be no effect on local waterways from the Proposed Action. The Proposed Action does not involve any in-water work. Therefore, the Proposed Action would have no effect on these listed species.

Several federally protected species are identified as having the potential to be present but have not been documented on Tyndall AFB and are therefore unlikely to be present, as determined in Section 3.5.1.2. These species include wood stork, eastern indigo snake, alligator snapping turtle, Florida skullcap, Harper's beauty, and white birds-in-a-nest. As described in Section 3.5.1.2, while potential habitat for these species exists in the study area, none were observed during field visits to the site (Air Force, 2021d). The Tyndall AFB INRMP identifies an installation objective to survey for indigo snakes where the ground will be disturbed within high priority habitat, if determined to be warranted by the installation Natural Resources Manager (Air Force, 2020e). As these species are not expected to be present at the proposed location, the Proposed Action is not likely to adversely affect these species.

The eastern black rail is most commonly found within marsh habitats with dense vegetation cover, which is not present at the Silver Flag site. However, eastern black rail has been observed on Tyndall AFB and is known to occupy higher elevation wetlands with shrubby vegetation along the Gulf Coast. Activity and noise associated with construction could cause minor, short-term annoyance to birds, if present, but bird species would be expected to relocate to nearby habitat. Given the amount of wet flatwood habitat on Tyndall AFB, the loss of the hydric pine flatwood wetland habitat under the Proposed Action would not have a significant impact on these species, if present. Given this, the Proposed Action may affect but is not likely to adversely affect eastern black rail.

The study area potentially contains appropriate habitat for the monarch butterfly. Southern milkweed—the monarch host plant—has a typical habitat of wet flatwoods; it is found on Tyndall AFB but has not been observed within the study area (Air Force, 2021d). Monarch butterflies are mobile, and the activity and noise associated with construction under the Proposed Action would be expected to discourage monarch butterfly from visiting the site during construction activities. Noise disturbances would be intermittent and limited to the construction period. Given the amount of wet flatwood habitat on Tyndall AFB, the loss of the hydric pine flatwood wetland habitat under the Proposed Action would not have a significant impact on this species, if present. Given this, the Proposed Action may affect but is not likely to adversely affect monarch butterfly.

As described in Section 3.5.1.2, Godfrey's butterwort is most commonly found in herbaceous bogs in longleaf pine savannas and pine flatwoods. There are no bogs within the study area wetlands, but Godfrey's butterwort has potential to occur within hydric pine flatwood habitat. Godfrey's butterwort is monitored on Tyndall AFB, and it is not known to be present at the Silver Flag site. As described in Section 3.5.1.2, while potential habitat for this species exists within the study area, the butterwort was not observed during field visits to the site (Air Force, 2021d). The Proposed Action may affect but is not likely to adversely affect Godfrey's butterwort.

Telephus spurge most commonly occurs on low sand ridges, but it can occur in mesic pine flatwoods, along disturbed sandy roads, and in wetlands with seepage slope species. These habitats are found in the vicinity of the Proposed Action, but the slopes of the wetlands in the study area are low and would not be considered primary habitat for telephus spurge. Telephus spurge are monitored on Tyndall AFB and as described in Section 3.5.1.2, while habitat for this species exists near the study area, telephus spurge was not observed during field visits to the site (Air Force, 2021d). Given this, the Proposed Action may affect but is not likely to adversely affect telephus spurge.

The Proposed Action would not reduce the distribution or viability of species or of critical habitats. Based on the above discussion, there would be no significant impacts on federally listed species with implementation of the Proposed Action, and no formal consultation between the Air Force and USFWS would be required. The Air Force will initiate informal consultation with the USFWS Florida Ecological Services Field Office regarding the determination that the Proposed Action may affect but is not likely to adversely affect federally threatened and endangered species with potential to be present. If a species listed under the Endangered Species Act is discovered during implementation of the Proposed Action, the Air Force would consult with USFWS under Section 7 of the Endangered Species Act. All coordination and consultation (formal or informal) with USFWS for this Proposed Action will be included in Appendix E as it occurs.

Several state-listed species have the potential to occur within or in the vicinity of the Proposed Action site. The pinewoods aster is associated with mesic to wet pine flatwoods habitat, which is present in the study area, but this species was not observed during wetland site reviews (Air Force, 2021d). Given the large amount of wet flatwoods habitat on Tyndall AFB, the loss of habitat from the construction of the Proposed Action would not impact the overall population or distribution of pinewoods aster.

Black bears are both protected by the state and considered a nuisance on the base. The Florida black bear commonly occurs at Tyndall AFB and is protected under the Florida Black Bear Conservation Rule. Tyndall AFB would continue to follow and implement the Florida black bear management objectives included in the installation INRMP to prevent and reduce conflicts with bears on the installation. The installation also conducts regular nuisance animal control measures through the securing and/or removal of attractants (such as pet food, trash, and bird feeders), which would further reduce the potential for human-wildlife conflict with black bears (Air Force, 2020e).

Based on the above discussion, there would be no significant impacts on federal- or state-listed species with implementation of the Proposed Action.

3.5.3.3 Migratory Birds and Bald Eagles

Several species of migratory birds are found at Tyndall AFB, particularly on the barrier islands and within wetlands where the military mission is minimal (Air Force, 2021c). Construction activities could cause short-term, minor impacts on migratory bird species from noise, wetland habitat alteration, and general disturbance. Birds would be expected to relocate to nearby areas that are not undergoing active construction. Given the extent of wetland habitat on Tyndall AFB, the loss of wetland habitat under the Proposed Action, which is 0.03 percent of the wet flatwoods present on the installation, would not significantly affect migratory bird habitat.

Tyndall AFB conducts regular bald eagle monitoring and management, as implemented through its INRMP. The installation conducts annual surveys for active bald eagle nests and maintains a 330-foot buffer around active nests. If an active nest were discovered near the Silver Flag site, the buffer and other pertinent guidelines from the installation's Bald Eagle Management Guidelines would be implemented, minimizing any potential for impacts on bald eagles (Air Force, 2020e). The Proposed Action would not result in any take or harassment of bald eagles.

3.5.4 No Action Alternative

Under the No Action Alternative, no construction or ground-disturbing activities would occur, and there would be no related effects on vegetation or wildlife, including federal- or state-listed species and habitat. Fire R&D activities would continue in the current, outlying spaces on Tyndall AFB, which would not result in any change in effects on vegetation or wildlife including federal- or state-listed species and habitat. There would be no significant impacts on biological resources under the No Action Alternative.

3.6 Hazardous Materials and Wastes and Contaminated Sites

Hazardous materials and substances include petroleum, natural gas, synthetic gas, acutely toxic chemicals, other toxic chemicals, or any substance with inherently hazardous properties. Hazardous wastes are any waste or combination of wastes that pose a substantial, actual, or potential hazard to human health or living organisms. Hazardous materials, hazardous or toxic substances, and hazardous wastes are primarily defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Toxic Substances Control Act; the Solid Waste Disposal Act; and the Resource Conservation and Recovery Act (RCRA) as well as by Section 311 of the Clean Water Act and Section 122 of the Clean Air Act. Certain types of hazardous wastes, called universal wastes, are defined in 40 CFR 273.

The DOD established the Defense Environmental Restoration Program (DERP) to facilitate thorough investigation and cleanup of contaminated sites on military installations associated with past activities, in compliance with CERCLA. These contaminated sites are generally termed Environmental Restoration Program sites and involve a wide range of potential hazards. The Installation Restoration Program identifies, investigates, and remediates potentially hazardous material disposal sites. The Military Munitions Response Program addresses unexploded ordnance, discarded military munitions, and munitions constituents on nonoperational rangelands.

3.6.1 Existing Conditions

The study area for hazardous materials and wastes and contaminated sites is the proposed construction area for fire R&D facilities in Silver Flag, but consideration extends to include the extent of management practices and policies at Tyndall AFB.

3.6.1.1 Hazardous Materials

Tyndall AFB has a Hazardous Material Emergency Planning and Response Plan that specifies the management and procedures associated with hazardous materials and substances (325 CES/CEIEC, 2022). All hazardous materials are required to be tracked for Emergency Planning and Community Right to Know Act (EPCRA) reporting purposes. Tyndall AFB also has a Spill Prevention, Control, and Countermeasure (SPCC) Plan that establishes procedures, methods, equipment, and other criteria to both prevent and respond to discharges of oily and hazardous substances into water bodies.

Hazardous materials commonly used at Tyndall AFB include petroleum, oil, and lubricants (POL); paints; cleaning agents; and pesticides. These materials are used across the installation in support of the operation and maintenance of aircraft, aerospace ground equipment, vehicles, communications, and physical infrastructure. Hazardous materials stored and used in the study area include those associated with the 9440 facilities that store jet A/A-1 aviation fuel and diesel fuel (325 FW, 2021a). Fuel and water used during training goes through an oil/water separator, and oil is then returned to the fire training pit for reuse (325 CES/CEIEC, 2022). The fire training area has a site-specific contingency plan, in the event of a spill (325 CES/CEIEC, 2022).

3.6.1.2 Hazardous Wastes

Tyndall AFB has a Hazardous Waste Management Plan that provides guidance on the proper handling and disposal of hazardous waste (325 FW, 2021b). Tyndall AFB is classified as a large quantity generator of hazardous waste. Building 6011, the hazardous waste warehouse, is the designated base-wide hazardous waste accumulation site; hazardous wastes are accumulated at initial accumulation sites where they are generated and then transferred to Building 6011. From Building 6011, hazardous waste is ultimately transported and disposed of off-base in accordance with applicable laws and regulations.

3.6.1.3 Toxic Substances

Toxic substances are those substances considered harmful when ingested or absorbed, including asbestos, lead-based paint, polychlorinated biphenyls, and radon.

Asbestos and lead-based paint are of greatest concern during renovation and demolition activities because disturbed fibers and dust can be inhaled or ingested. Demolition of hurricane-damaged facilities was analyzed in the Rebuild EA; Buildings 9718, 9708, and 9443 were determined not likely to contain asbestos or lead due to their ages of construction. Impacts associated with demolition and disposal, as conducted in accordance with applicable laws and regulations, were determined to be not significant (Air Force, 2020a). Bans on asbestos-containing materials and products were enacted in 1989; USEPA has recently proposed a ban on the only remaining uses of chrysotile asbestos in limited commercial applications (USEPA, 2022d). Lead-based paint was banned in 1978. Consequently, asbestos and lead-based paint would not be expected in future construction and are not analyzed further in this EA.

Polychlorinated biphenyls were banned in 1979. All equipment at Tyndall AFB has been certified free of polychlorinated biphenyls (325 CES/CEIEC, 2022). Therefore, these materials would also not likely be encountered and are not analyzed further in this EA.

Radon is a naturally occurring radioactive gas that is released from the underlying bedrock; it poses a risk when people are chronically exposed to elevated radon levels indoors. Bay County is in an area that has a low likelihood for elevated levels of radon (USEPA, 2019). Indoor radon accumulation has not been shown to be an issue at Tyndall AFB and is not analyzed further in this EA.

3.6.1.4 Environmental Restoration Program Sites

USEPA placed Tyndall AFB on the National Priorities List under CERCLA in 1997. A Federal Facility Agreement signed in 2013 by USEPA, FDEP, and the Air Force guides site cleanup plans on the base (USEPA, 2022e). A total of 51 operable units are identified across Tyndall AFB in various stages of cleanup (USEPA, 2022f). Under CERCLA, operable units are discreet actions that make up the incremental steps towards addressing contamination; they are distinctly defined by geography, specific problems, or contaminated medium. Therefore, operable units may encompass more than one Environmental Restoration Program site or different pathways of exposure of the same site.

Environmental Restoration Program Site TU539 is in the Silver Flag fire training area; PFAS was identified here in soil and groundwater in 2014. The former wastewater treatment plant spray fields immediately south of this area and the former wastewater treatment plant southeast of this area have also screened positive for PFAS upon recent inspections. The wastewater treatment plant was demolished between 2012 and 2014, but it would have received AFFF effluent from the fire training pits (AFCEC, 2018). Preliminary investigations and site inspections pursuant to CERCLA and the DERP have occurred at numerous areas suspected of PFAS contamination at Tyndall AFB; the next step will be a remedial

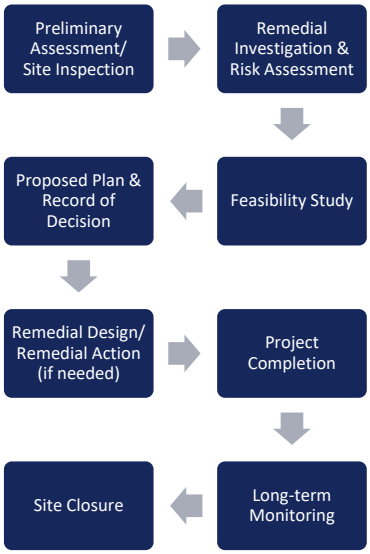
investigation, likely followed by a feasibility study (refer to inset, right).Together, the Silver Flag fire training area, former wastewater treatment plant, and wastewater spray fields are termed TU539P-Sub; the approximate boundaries of these areas are shown in Figure 3-3, and they are discussed in more detail below. TU539P-Sub currently includes at least three operable units that are anticipated to undergo a remedial investigation to determine extent of PFAS contamination and safety risks of the site.

PFAS. PFAS—per- and polyfluoroalkyl substances—is the general grouping for thousands of manufactured chemicals. Two such PFAS chemicals are PFOS and PFOA (respectively, perfluorooctane sulfonate and perfluorooctanoic acid), which were widely used beginning in the 1940s across numerous applications, including nonstick cookware coatings, stain-resistant coatings and fabrics, and fire-extinguishing foams such as AFFF. PFAS do not break down in the environment, can move through soils and contaminate drinking water sources, and bioaccumulate or build up in fish and wildlife.

PFOA, PFOS, and other PFAS chemicals are an emerging contaminant of concern as research continues into the health risks associated with these chemicals. USEPA published a proposed rule to designate PFOA and PFOS as CERCLA hazardous substances (USEPA, 2022g). If finalized, this change in designation would trigger the following: (1) reporting obligations when PFOA or PFOS are released above the reportable quantity, (2) obligations on the U.S. Government when it transfers certain properties, and (3) an obligation on the U.S. Department of Transportation to list and regulate CERCLA-designated hazardous substances as hazardous materials.

CERCLA Process

The Comprehensive Environmental Response, Compensation, and Liability Act—CERCLA, also known as Superfund—authorizes the President to respond to releases or threatened releases of contamination into the environment. For federal facilities, such as Tyndall AFB, the basic process below is followed to clean up contamination.



The operable units involving PFAS at Tyndall AFB are entering the remedial investigation study phase. This process is anticipated to be complete in 2025.

(USEPA, 2022f)

USEPA recently identified regional screening and removal management levels for six PFAS chemicals (including PFOA and PFOS) to help in determining if further investigations or actions are needed to protect public health (USEPA, 2022h). Screening and removal management levels are indicators of ecological and human health used to investigate potential contamination and are not cleanup standards or targets. The DOD adopted these screening levels to aid in determining if further investigation is needed (DOD, 2022).

In addition, FDEP issued guidance in 2020 identifying provisional groundwater and soil target cleanup levels. As the science on PFAS evolves, USEPA and FDEP may update screening levels or target levels or add other PFAS chemicals.

Figure 3-3. Environmental Restoration Program Sites and Areas of PFAS Contamination in the Study Area (TU539P-Sub)

TU539 and Silver Flag Fire Training Area. AFFF has historically been used for fire testing and training at Silver Flag. All fluids are reportedly collected in lined fire pits, but it is likely that fluids were inadvertently released since the pits were constructed in 1991. The Silver Flag fire training area was sampled in 2014 for PFOS, PFOA, and another PFAS chemical associated with AFFF (perfluorobutanesulfonic acid, or PFBS); the sampling results are shown in Table 3-7 and Table 3-8. Those samples showed PFOS in the soil above the 2014 screening levels at two locations, and PFOA and PFOS in the groundwater above screening levels at all four sample locations (Tyndall AFB, 2021; AFCEC, 2018). Sampling has not been conducted since 2014 at this location.

Groundwater at the Silver Flag fire training area flows to the northeast. The closest water supply well—Well 9 at Building 9308—is 2.2 miles to the north and west and cross-gradient; this is a non-public well. Multiple residential public water supply wells and water production wells are within 4 miles of Tyndall AFB; however, the immediate confining layer above the Floridan Aquifer and the position of Tyndall AFB on a peninsula prevent lateral migration of contaminants from the surficial aquifer. Therefore, the site inspection report determined the human ingestion exposure pathway for PFAS-contaminated groundwater is not complete (AFCEC, 2018). Given the current use of the Silver Flag fire training area, the site inspection report also determined that the human exposure pathway for PFAS-contaminated soil is not complete (AFCEC, 2018). The site inspection report for the Silver Flag fire training area concluded that PFAS concentrations exceed screening levels, and a remedial investigation is recommended to determine the extent of contamination in the area (AFCEC, 2018).

Table 3-7. PFAS Soil Sampling Results at TU539 (2014)

PFAS Chemical	2018 Soil Screening Level (mg/kg)	Site TU539CS001 (mg/kg)	Site TU539CS002 (mg/kg)	Site TU539CS003 (mg/kg)	Site TU539CS004 (mg/kg)
PFBS	130	0.011	0.0095	0.01	0.01
PFOA	0.126	0.023	0.019	0.0119	0.021
PFOS	0.126	0.176	0.0642	0.324	0.0355

(Tyndall AFB, 2021; AFCEC, 2018)
Key: kg = kilograms; mg = milligrams; PFBS = perfluorobutanesulfonic acid; PFOA = perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid; USEPA = U.S. Environmental Protection Agency.
Note: Results in red text exceed the USEPA's 2018 regional screening levels that were current at the time of the sampling report.

Table 3-8. PFAS Groundwater Sampling Results at TU539 (2014)

PFAS Chemical	2016 Groundwater Screening Level (µg/L)	Site TU539TW001	Site TU539TW002	Site TU539TW003	Site TU539TW004
PFBS	40	6.38	0.4	3.04	0.8
PFOA	0.07	6.46	2.98	15.6	2.26
PFOS	0.07	898	22.9	298	252
PFOA + PFOS	0.07	902.46	25.88	313.6	254.26

(Tyndall AFB, 2021; AFCEC, 2018)
Key: µg = micrograms; L = liters; PFBS = perfluorobutanesulfonic acid; PFOA = perfluorooctanoic acid; PFOS = perfluorooctanesulfonic acid.
Note: Results in red text exceed the USEPA's 2016 Health Advisory Limits that were current at the time of the sampling report.

Former Wastewater Treatment Plant and Spray Fields. The former wastewater treatment plant is southeast of the Silver Flag fire training area, and the spray fields are to the south (refer to Figure 3-3). Soil and water resources of both areas were sampled for PFAS in 2017 during a base-wide investigation of suspected AFFF releases. The analytical results at the former plant do not indicate that PFAS compounds are in the soils or sediments at concentrations exceeding the 2018 screening criteria (when the report was prepared). Groundwater samples at the former plant and spray field showed PFOA and PFOS above the 2018 screening criteria. Surface water samples collected from the extant holding pond at the plant and the man-made drainage ditches surrounding three sides of the spray field also confirmed the presence of PFAS above screening levels. Potentiometric contours suggest that groundwater flows south from the former plant and west from the spray fields, both of which are away from the Silver Flag fire training area. The 2018 report determined that human exposure pathways were not complete, but these areas were recommended for remedial investigation (AFCEC, 2018). Sampling has not been conducted since 2017 at these locations.

3.6.1.5 Solid Waste

Solid wastes are discarded materials that are nonhazardous. Universal wastes as defined in 40 CFR 273 (i.e., batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans) are characterized and disposed of in accordance with applicable hazardous or universal waste regulations and are not considered solid waste.

Tyndall AFB maintains an Integrated Solid Waste Management Plan that identifies solid waste diversion goals and guides solid waste practices. Tyndall AFB has a robust recycling program with multiple recycling stations across the base for convenience (Reeves, 2022). Solid waste produced at Tyndall AFB is properly collected, handled, managed, transported, and disposed of off-base by a contractor.

3.6.2 Evaluation Criteria for Environmental Consequences

Effects on hazardous materials and wastes would be considered adverse if the Proposed Action resulted in noncompliance with applicable federal or state regulations governing these materials, or if the Proposed Action increased the amounts of hazardous materials used, or hazardous wastes generated, beyond current Tyndall AFB management procedures and capacities. Effects on the DERP were evaluated based on the extent to which the Proposed Action could disturb or create contaminated sites, or if the Proposed Action could hinder potential monitoring or remediation activities.

3.6.3 Proposed Action

3.6.3.1 Hazardous Materials and Wastes

Construction activities would use hazardous materials and generate hazardous wastes in small quantities. Common hazardous materials used during construction include diesel fuel, gasoline, propane, hydraulic fluids, oils, lubricants, and batteries. Common hazardous wastes include empty containers from hazardous materials, spent solvents, waste oil, lead-acid batteries, and any spill cleanup materials, if used. Construction contractors are responsible for ensuring that the transport, use, storage, and disposal of hazardous materials and wastes complies with applicable laws and regulations. All hazardous materials used for the proposed construction would be provided to the 325 CES/CEIEC Hazardous Materials Office using Tyndall AFB Forms 81 and 82 along with Safety Data Sheets for each material. Hazardous materials must also be tracked throughout the duration of the project with usage quantities submitted monthly to the 325 CES/CEIEC Hazardous Materials Office on a Tyndall AFB Form 83. Adherence to policies, procedures, and regulations would minimize the potential impacts from exposure and accidental releases during construction. In the event of an accidental release, contaminated media would be treated

on-site or would be promptly removed and disposed of in accordance with applicable construction site or fire training area spill contingency plans and federal and state regulations. Short-term changes in hazardous materials and waste use, disposal, storage, or transportation would not be significant under the Proposed Action.

The fire R&D mission would continue to use hazardous materials and to generate hazardous wastes. Examples of hazardous materials commonly used include POLs in the fire garage and combustible liquids used during laboratory or small- or medium-scale fire tests such as gasoline, diesel, or aviation fuels. Hazardous wastes generated could include oily water effluent or burnt materials. However, the type and tempo of training would be consistent with previous levels, so the kinds and quantities of hazardous materials used, and hazardous wastes generated, would be comparable to the existing conditions. Waste streams would be handled appropriately according to volume and contaminants of concern. The design of the proposed fire R&D facility, fire garage building, and associated pavements and infrastructure would incorporate all necessary containment features to protect resources in the event of a spill. Updates to the fire training area site-specific contingency plan would include the addition of the proposed fire R&D facilities to this area. Effects would not be significant from implementing the Proposed Action at the Silver Flag location.

3.6.3.2 Contaminated Sites

The proposed fire R&D facilities would be constructed within TU539P-Sub, which is known to contain PFAS chemicals, specifically, PFOA, PFOS, and PFBS. The Silver Flag fire training area, the nearby former wastewater treatment plant, the adjacent former spray fields, and others on Tyndall AFB with suspected PFAS contamination have undergone preliminary assessments and site inspections; a remedial investigation would be needed to determine the extent of contamination.

All soil-disturbing and construction activities near or within TU539P-Sub must adhere to established guidelines (Tyndall AFB, 2021), which conform to the Air Force's memorandum for record with the FDEP to ensure that soil from Tyndall AFB does not exceed PFOS or PFOA standards (Air Force, 2021b); see Appendix B for these full documents. The following summarizes the measures that would be used to protect human health and safety and prevent further contamination during construction:

1. The construction contractor must comply with 29 CFR 1910.120, OSHA Standards, and Hazardous Waste Operations and Emergency Response (HAZWOPER) and must address the health and safety of its employees associated with construction activities relative to this project.
2. Contaminated soil from excavation or construction activities may be temporarily moved within TU539P-Sub, as long as it is subsequently redeposited in the same excavated area. Soils should be staged on plastic sheeting and shall not leave TU539P-Sub. Best management practices shall be used to prevent contamination from spreading into previously uncontaminated or less contaminated areas within TU539P-Sub. If soils are to be removed for disposal from the site, they shall be tested prior to disposal or reuse.
3. Waste soils must be tested using approved procedures and analyzed for characteristic hazardous chemicals. These results would be provided to the base Restoration Program Manager (RPM) and the 325 CES Hazardous Waste Program Manager (HWPM) prior to transportation for proper disposal at an authorized facility. If approved by the RPM and the HWPM, soils may be conservatively treated and handled in accordance with appropriate hazardous waste laws and regulations. Soils that exhibit a hazardous waste characteristic would be further sampled to determine applicability of land disposal restrictions and any underlying hazardous constituents in accordance with applicable regulations and standards. The construction contractor would sample and profile soils using a qualified environmental professional, properly handle, and properly

dispose of any contaminated media, and provide all necessary records to the appropriate Tyndall AFB personnel.

4. Prior to removing soils from TU539P-Sub and the construction area and reusing these soils elsewhere, the soils must first be stockpiled in specified volumes and then sampled and analyzed by a qualified environmental professional (including PFOS and PFOA as well as volatile organic compounds, semi-volatile organic compounds, RCRA metals, and petroleum residual organics). Soil sampling results must be compared with the FDEP residential soil cleanup target levels to determine the acceptability for proposed reuse on-base; for reuse along the flightline, the FDEP industrial soil cleanup target levels are acceptable. If soil sampling results exceed remedial goals or soil cleanup target levels for any contaminant, a specified process should be followed to resample the failed constituent(s), and then to divide the stockpile into aliquots to determine if and where any portion of the stockpile can be reused. Upon following all appropriate sampling protocols, aliquots or stockpiles that exceed FDEP standards must be moved to the waste pad for off-site disposal at an approved disposal facility.

5. The construction contractor must prepare a summary report documenting any sampling and testing results; contaminated soil excavation volumes, depths, and delineation; and reuse or disposal actions.

6. Construction activities shall avoid damaging or disturbing any monitoring wells. Monitoring wells shall also be protected from the introduction of any construction-related contaminants. If wells are damaged during construction, then the repair, replacement, or abandonment would be conducted only with approval from the RPM; all work would be conducted by an appropriately licensed water well driller; and all work would require coordination with USEPA, FDEP, and the Tyndall AFB RPM.

7. Any soils brought on-site and used for backfill must be properly tested or certified clean to ensure that no contaminants are being applied on-site. The source of backfill should be natural or virgin material and not from an area that was previously been used for commercial or industrial activities. If the backfill soils are not certified clean with appropriate documentation, soils must be tested in accordance with approved methods for the following: volatile organic compounds; semi-volatile organic compounds (for example polycyclic aromatic hydrocarbons, pesticides, polychlorinated biphenyls, and phenols); RCRA metals; and petroleum residual organics. Analytical results should be compared to the FDEP residential soil cleanup target levels to determine acceptability of the proposed material as clean fill.

8. Construction contractors must be informed of the appropriate procedures if any contamination is encountered (i.e., suspicious odors, fuel smells, soil staining, odd soil colors, unfamiliar liquids, buried materials) at the construction site. If these conditions are encountered, the RPM and HWPM must be contacted. If discovered, these soils should be separated and then stockpiled on, and covered with, plastic sheeting until they are properly tested and disposed.

9. If dewatering is required, the construction contractor is responsible for permitting, handling, storage, characterization, treatment, and disposal of any potentially contaminated dewatering effluent. Dewatering within a groundwater plume may be allowed as long as the effluent percolates back into the known plume areas in accordance with an infiltration plan approved by FDEP, use of other approved on-site method(s) of disposition, and/or is disposed of off-site. Before off-site disposal, it must be analyzed for characteristic hazardous chemicals and other constituents in accordance with appropriate methods and regulations and as required by treatment/disposal facilities. All necessary results and records must be provided to the appropriate Tyndall AFB personnel prior to transportation for proper disposal at an authorized disposal facility.

10. Any equipment that comes in contact with contaminated soils or groundwater shall be properly decontaminated before mobilizing off-site. Any decontaminated fluids must be collected and stored in 55-gallon drums, properly labeled and stored in the manner and not to exceed the time requirements of RCRA and applicable laws on on-site pallets until sampled, tested, and disposed of at a proper disposal facility.

Adherence to these identified procedures (Tyndall AFB, 2021) would minimize the potential for construction workers to be directly exposed to contamination, ensure proper handling and disposal of any contaminated media, protect monitoring infrastructure, and safeguard against contaminated media from the area of construction extending beyond the boundaries of TU539P-Sub. Construction would not hinder future cleanup efforts as site investigation continues, and remedial actions are identified and pursued. Short-term effects during construction would not be significant with implementation of the identified procedures.

The source of PFAS contamination at TU539P-Sub was fire testing and extinguishing practices using legacy formulations of AFFF dating to as early as 1991. Since 2016, the Air Force has transitioned from legacy AFFF to a new, more environmentally responsible AFFF (see inset, right). AFFF is not considered a hazardous material, but any uncontained releases of AFFF or spent AFFF are, and would continue to be, treated as a hazardous material spill with immediate cleanup, regardless of formulation.

Proposed fire R&D facilities would be equipped with a fire suppression system capable of discharging water or AFFF. Fire suppression systems would be equipped with the newer and environmentally preferable formula of AFFF (see inset, right). The fire testing and training mission would continue commensurate with previous levels and protocols. In accordance with Section 323 of the 2020 National Defense Authorization Act, non-emergency use of AFFF is permissible for testing equipment and training personnel if complete containment, capture, and proper disposal mechanisms are in place to ensure no AFFF is released into the environment (Public Law 116-92). The proposed fire R&D facility, fire garage building, and associated pavements and infrastructure would incorporate all necessary containment features to ensure full capture and appropriate disposal of AFFF. AFCEC would continue existing management, procedures, and policies that promote safe and effective fire R&D.

AFFF Variations

Legacy AFFF contained long-chain fluorosurfactants with eight or more carbons (“C8” fluorosurfactants). These legacy C8 AFFF formulas degrade into biopersistent PFOS and PFOA chemicals, and they are the source for much of the PFAS contamination on Air Force installations.

The Department of Defense is working towards entirely removing AFFF that contains PFOA and PFOS from the military inventory. The Air Force began replacing legacy C8 AFFF in 2016 with a short-chain fluorotelomer-based surfactant that contains six or fewer carbons (“C6,” e.g., Phos-Chek® 3% AFFF Mil-Spec foam). The newer C6 AFFF formula contains trace quantities of PFAS but is not considered bioaccumulative or biopersistent. The new AFFF also meets stringent military specifications to ensure effective firefighting capabilities. C6 AFFF is being used in all Air Force fire trucks and new or remodeled hangar and fire facilities with AFFF infrastructure.

The Air Force continues to research and pursue PFAS-free firefighting technologies.

(USEPA, 2022g; AFCEC, 2022b)

AFFF disposal could include returning the media to the source location; treating with methods such as granular activated carbon, ion exchange, or other technology, and returning to the source location; discharging dewatering effluent to the stormwater drain under permitted conditions; or disposing of the waste in an appropriately permitted landfill (Tyndall AFB, 2021). Appropriate AFFF disposal would depend on the PFAS concentration as well as if other contaminants are present; disposal would comply with all applicable laws and regulations. See also guidelines included in Appendix B.

For these reasons, the continued use of AFFF at the proposed fire R&D buildings would not worsen existing PFAS contamination or contaminate new areas. Impacts would not be significant under the Proposed Action.

3.6.3.3 Solid Waste

Using empirical estimates to approximate potential construction waste based on building square footage, and assuming a 50 percent diversion rate of recycled materials, construction activities could generate approximately 23 tons of landfill waste over the course of construction (USEPA, 2013). Though construction waste would only be generated temporarily, any waste sent to a landfill would be considered an irretrievable, adverse impact. The construction contractor would be responsible for disposing of all construction debris, so the specific landfill where waste would be taken is not known. FDEP identifies six permitted construction and demolition landfills in Bay County alone as well as numerous others in surrounding counties, so sufficient capacity is regionally available (FDEP, 2021). Therefore, the short-term generation of nonhazardous construction debris would not be significant under the Proposed Action.

3.6.4 No Action Alternative

Under the No Action Alternative, the fire R&D missions would continue to operate in temporary facilities. There would be no construction-related impacts on hazardous material and hazardous waste management, solid waste generation, or PFAS contamination. Laboratory testing would occur in Building 1117 while other aspects of the fire R&D mission would continue to occur across Tyndall AFB at Sky X range and Silver Flag. The temporary trailer at Silver Flag is also within TU539P-Sub, though no disturbance of soil or interactions with groundwater would be expected from personnel using this trailer. Inadequate exterior vehicle storage increases the potential for leaks or spills. The continued lack of facilities tailored for the small- and medium-scale fire testing and vehicles could hamper mission-related testing scenarios, if appropriate spill containment or safety features are not available. AFCEC would continue existing management, procedures, and policies that promote safe and effective fire R&D while managing risks associated with hazardous materials, hazardous wastes, solid waste, and AFFF.

3.7 Socioeconomics

Socioeconomics analysis focuses on economic and social elements such as demographics and economic conditions (i.e., employment, income, and unemployment rates). Changes to the demographic and economic conditions are often accompanied by changes in other community components including housing availability, education, and the provision of installation and public services.

The study area for socioeconomics analysis focuses on the area most affected by the Proposed Action. Tyndall AFB is located 12 miles east of Panama City in Bay County, Florida. Since principal direct and secondary socioeconomic effects of construction activities associated with the Proposed Action would have a regional impact, the study area for the analysis of socioeconomic impacts is defined as Bay County. In addition to Bay County, data for Panama City and the state of Florida are provided, where applicable, for further information and comparison.

3.7.1 Existing Conditions

3.7.1.1 Population

Based on the most recent decennial census from the U.S. Census Bureau (USCB), the estimated population in Bay County in 2020 was 175,216 people, which represents approximately a 3.8 percent increase since 2010. Florida also experienced an increase in population between the ten-year period of

almost 15 percent while Panama City experienced a decline of nearly 10 percent during the same time period. However, between 2020 census estimates and 2021 estimates, population in all three areas increased. Between 2020 and 2021, the population in Bay County increased by 2.3 percent, Panama City increased by 3.3 percent, and the state of Florida increased by 1.1 percent (USCB, 2022).

As of fiscal year 2021, the number of personnel associated with Tyndall AFB, including dependents, retirees, and retiree dependents totaled 22,431 people. This includes 2,902 active-duty military personnel, 5,328 active-duty military dependents, 809 appropriated fund civilians, 735 non-appropriated fund contract civilians and private business employees, and 12,657 military retirees and their dependents (Air Force, 2021e).

3.7.1.2 Economic Activity

As of 2020, the total number of employed people ages 16 years and over in Bay County was estimated to be 82,380. The industry employing the highest percentage of the civilian labor force, age 16 years and over, in the county was the educational services, and health care and social assistance industry (18.5 percent) followed by the arts, entertainment, and recreation, and accommodation and food services industry (13.6 percent) and the retail trade industry (13.3 percent). Approximately 6,261 (7.6 percent) of civilians employed in Bay County were in the construction industry (USCB, 2020a). Per capita income in the county was $30,774, which was higher than the per capita income for Panama City ($29,473) but lower than the state ($32,848) (USCB, 2020a). The most recent average annual unemployment rates reported by the U.S. Bureau of Labor Statistics estimates the 2021 average annual unemployment rate in Bay County at 3.9 percent and 4.6 percent in the state of Florida (BLS, 2022a; BLS, 2022b).

The total economic impact of Tyndall AFB during fiscal year 2021 was $1,014 million. This includes payroll for military and civilian personnel of approximately $357 million, total expenditures of more than $536 million, and creation of 2,511 indirect jobs with an estimated annual dollar value of over $120 million (Air Force, 2021e).

3.7.1.3 Housing

According to the most recent American Community Survey, with five-year estimates, Bay County has a higher percent of vacant housing units than Panama City and the state of Florida. Bay County has a total of 104,060 housing units, of which 70.7 percent are occupied and 29.3 percent are vacant. In Panama City, there are 17,788 total housing units, of which 88.4 percent are occupied and 11.6 percent are vacant. In the state, there are 9,562,324 total housing units of which 82.9 percent were occupied and 17.1 percent were vacant (USCB, 2020b). The median value of an owner-occupied housing unit in Bay County ($195,000) is higher than in Panama City ($169,100), but lower than the state ($232,000) (USCB, 2020b). There are three housing options available for Tyndall AFB personnel: privatized military family housing, unaccompanied housing, and community housing (Air Force, 2022).

3.7.1.4 Education

There is one school located on Tyndall AFB, Tyndall Academy, which serves students in pre-kindergarten to seventh grade. Tyndall Academy is one of 41 public schools in the Bay School District in Bay County (Florida Department of Education, 2021). During the 2021–2022 school year, there were 26,199 students enrolled throughout the Bay School District, of which 562 students (2.2 percent) were enrolled at Tyndall Elementary (Florida Department of Education, 2022a; 2022b). During the same year, the district had a total of 1,696 teachers, of which 33 teachers (2.0 percent) were at Tyndall Academy (Florida Department of Education, 2022a; 2022b).

3.7.1.5 Installation and Public Services

Public services in Bay County include law enforcement, fire protection, emergency medical services, and medical services. The closest emergency room to Tyndall AFB is the Gulf Coast Regional Medical Center in Panama City, which is approximately 12.5 miles northwest from the installation.

Installation services available also include law enforcement, fire protection, and emergency medical and medical services. The Tyndall Community Police provide law enforcement (police) services, Tyndall AFB Fire and Emergency Services and the Ambulance Services Department provide fire protection and emergency services, and the 325th Medical Group provides medical services at Tyndall AFB.

3.7.2 Evaluation Criteria for Environmental Consequences

Socioeconomic are assessed in terms of direct impacts on the local economy and related impacts on other socioeconomic resources, such as housing. A significant impact to socioeconomic conditions would be determined if the Proposed Action would result in one or both of the following:

- A substantial change in the local or regional economy, employment, or business volume.
- A substantial change to the local or regional population in housing, education, installation services, or public services from the increased or decreased demands of the population change.

3.7.3 Proposed Action

There would be no anticipated change to the number of personnel employed or stationed at Tyndall AFB as a result of the Proposed Action.

In 2020, there were 82,380 civilian employees in Bay County, of which 6,261 (7.6 percent) were employed in the construction industry. Based on the number of construction jobs in the study area, it is expected that the local labor force would be sufficient to meet the demand for construction jobs associated with the Proposed Action without a migration of workers into the area. Any indirect or induced employment because of construction expenditures would also be expected to be supported from the local community. Since it would be expected that all construction workers would be from the local or regional area, then no impacts on population would occur as a result of the Proposed Action.

The Proposed Action would result in short-term, minor, beneficial effects on the local economy from construction activities at Tyndall AFB. Construction activities would stimulate the local economy directly and indirectly from the employment of local labor and the purchase of construction-related materials, goods, and services. Benefits associated with construction would be temporary, lasting for the duration of the activity.

There would be no change to the number of personnel employed or stationed at Tyndall AFB as a result of the Proposed Action; therefore, no significant impacts on installation and public services including demand for housing, education, law enforcement, fire protection, emergency medical services, and medical services would be expected.

3.7.4 No Action Alternative

There would be no anticipated change to the number of personnel employed or stationed at Tyndall AFB as a result of the No Action Alternative. Consequently, there would be no change to installation and public services including demand for housing, education, law enforcement, fire protection, emergency medical services, and medical services from existing conditions. The No Action Alternative would not result in any additional socioeconomic impacts.

Under the No Action Alternative, the proposed construction would not occur and there would be no associated expenditures that would provide short-term construction employment or generate additional indirect and induced income beyond the scope of normal conditions and influences within the study area.

3.8 Environmental Justice and Protection of Children

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs federal agencies to address environmental and human health conditions in minority and low-income communities. The *Air Force Guide for Environmental Justice Analysis under the Environmental Impact Analysis Process (EIAP)* (Air Force, 2020f) also provides guidance on how to fulfill the requirement for environmental justice analysis. Minority and low-income are defined as follows:

- Minority—defined according to USCB categorizations as "Black or African American," "American Indian or Alaska Native, "Asian," "Native Hawaiian and Other Pacific Islanders," "Hispanic or Latino," and "Some Other Race." Note that for this analysis, the demographic group "Two or More Races" was also included in the minority population to be consistent with the difference between the "Total Population" and "Not Hispanic or Latino, White alone" categories reported in the *U.S. Census 5-Year American Community Survey, 2016–2020*.
- Low-Income—The term "low-income" is used interchangeably with "poverty." USCB identifies an individual or family as "below the poverty level" if the total income is less than the corresponding poverty threshold that is established annually by the USCB.

In addition to environmental justice issues are concerns pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, which directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children. The USEPA and the Air Force Environmental Impact Analysis Process guidance also identify the importance of considering an elderly person as a sensitive receptor to potential environmental impacts (Air Force, 2020f). For this analysis, children are defined as people at age 17 or under and elderly are defined as people at age 65 or older.

The study area for environmental justice is the same as that described for socioeconomics effects (Section 3.7) and is defined as Bay County, Florida.

3.8.1 Existing Conditions

Baseline conditions in the study area are shown in Table 3-9 and Table 3-10. Information for the state of Florida is also included for comparison. Data is from the most recent American Community Survey, 5-year estimates, for 2016–2020.

As shown in Table 3-9, there are 43,555 people that identify themselves as minority in Bay County, which accounts for 24.2 percent of the total population (USCB, 2020c). The percentage of the population that is minority in Bay County (24.2 percent) is less than that of the state of Florida (46.6 percent).

Table 3-10 shows the number of people within Bay County and the state of Florida that are considered low-income. Approximately 13 percent in the county is identified as low-income compared to an estimated 13.3 percent in the state of Florida (USCB, 2020d).

As shown in Table 3-11, 21.1 percent in Bay County are defined as children (age 17 or under). In comparison, 19.9 percent in the state of Florida are children. The USCB reported 18.4 percent of the total population in Bay County as elderly. In the state of Florida, a reported 21.6 percent of the total population is elderly (USCB, 2020e).

Table 3-9. Minority Populations in the Study Area (2020)

Geographic Unit	Total Population	Black/ African American	American Indian/ Alaska Native	Asian	Native Hawaiian/ Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino	Total Minority	Percent Minority
Bay County	180,067	19,093	473	4,031	233	941	6,837	11,947	43,555	24.2%
Florida	21,216,924	3,231,108	39,070	579,476	10,889	90,892	465,441	5,468,826	9,885,702	46.6%

Source: (USCB, 2020c)

Table 3-10. Low Income Populations in the Study Area (2020)

Geographic Unit	Total Population for Whom Poverty is Calculated [1]	Percent Low-Income	Percent Minority
Bay County	177,623	13.0%	24.2%
Florida	20,793,628	13.3%	46.6%

Source: (USCB, 2020d)

Note: [1] "Population for Whom Poverty is Calculated" does not include persons for whom the USCB cannot determine poverty status such as unrelated individuals under age 15, people living in college dormitories and in institutional group quarters. Therefore, the total population in poverty tables may not total the overall population (USCB, 2021).

Table 3-11. Children and Elderly Populations in the Study Area (2020)

Geographic Unit	Number of Children (Age 17 or Under)	Percent of Children (Age 17 or Under)	Number of Elderly (Age 65 or Over)	Percent of Elderly (Age 65 or Over)
Bay County	38,057	21.1%	33,139	18.4%
Florida	4,214,444	19.9%	4,591,026	21.6%

Source: (USCB, 2020e)

The closest off-installation school is Parker Elementary, which is ten miles from the proposed Silver Flag construction site. One school, Tyndall Academy, is located on Tyndall AFB approximately eight miles from the Silver Flag location. There is also a child development center located on Tyndall AFB, which provides childcare services for children ages five weeks to six years old. The child development center is located more than ten miles from the proposed Silver Flag construction site.

3.8.2 Evaluation Criteria for Environmental Consequences

This environmental justice analysis follows the process detailed in the most recent *Air Force Guide for Environmental Justice Under the Environmental Impact Analysis Process* (Air Force, 2020f).

3.8.3 Proposed Action

As shown in Table 3-9 and Table 3-10, the percentage of the minority population in the county (24.2 percent) is lower than the state (46.6 percent), and the percentage of low-income populations in the county (13.0 percent) is lower than the state (13.3 percent). In addition, all construction associated with the Proposed Action would occur entirely on base, and construction noise would not be expected to impact residential areas or sensitive receptors. There are no day care centers or schools near the proposed project site and standard construction site safety precautions would be implemented to ensure children would not be exposed to increased health or safety risks. Therefore, no disproportionately high and adverse human health or environmental effects on minority or low-income populations have been identified under the Proposed Action. There would be no disproportionate risks to children or elderly populations that would result from environmental health risks or safety risks with implementation of standard construction site safety precautions.

3.8.4 No Action Alternative

Under the No Action Alternative, there would be no changes to baseline conditions. The percentage of the minority, low-income, and elderly populations in the county are lower than the state but the percentage of children in the county is higher than the state. Since there would be no change to the number of personnel employed or stationed at Tyndall AFB as a result of the No Action Alternative, then there would be no changes to the baseline demographics, including race, income, and age within Bay County. The proposed construction would not occur, and there would be no associated noise or additional health and safety risks from children from baseline conditions. Therefore, there would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations, nor would there be disproportionate risks to children or elderly populations under the No Action Alternative.

4 CUMULATIVE EFFECTS

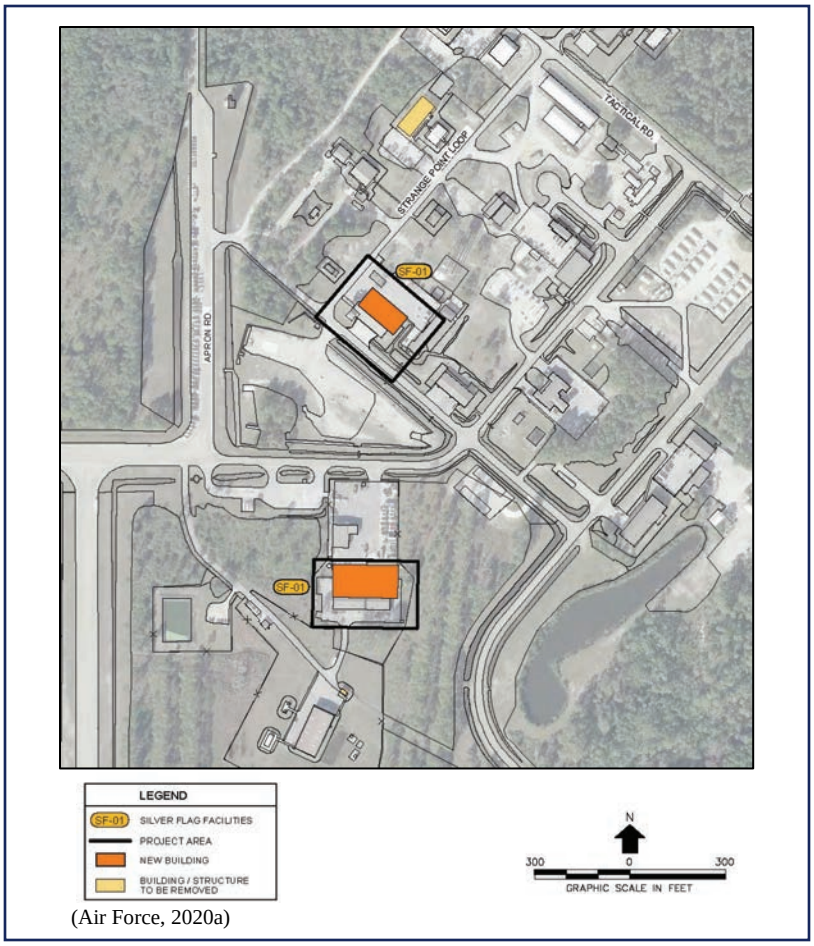
Cumulative effects are those impacts that result in the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. The cumulative effects analysis qualitatively considers other reasonably foreseeable projects occurring within the same time frame and geographic extent as the Proposed Action. This EA does not consider future actions that are speculative.

4.1 Projects Considered for Potential Cumulative Effects

Most activities on Tyndall AFB currently pertain to rebuilding in the wake of Hurricane Michael. The Rebuild EA provides the most comprehensive foundation for cumulative actions planned in the foreseeable future over the next five years (Air Force, 2020a). Considering the relatively small footprint of the proposed fire R&D facilities at the Silver Flag location, cumulative actions planned at or near Silver Flag were considered more likely to result in cumulative effects than actions further removed from Silver Flag. In addition to base-wide reconstruction, Tyndall AFB was also slated for F-35A and MQ-9 basing actions (Air Force, 2020g). While the F-35A beddown is underway and considered in this cumulative effects analysis, the Air Force has deferred MQ-9 basing (Air Force, 2021f). Therefore, as there is no decision regarding MQ-9 basing, that action is not considered for potential cumulative effects at this time.

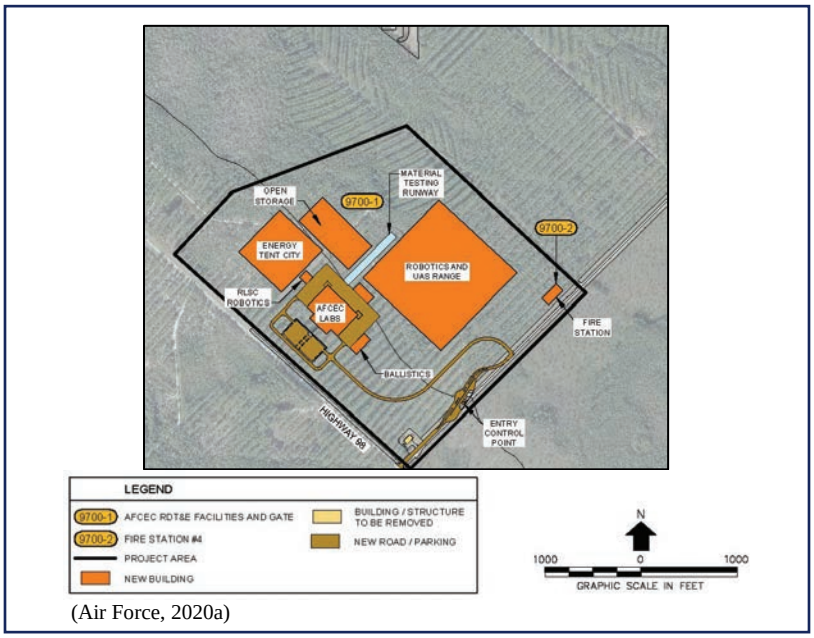
Silver Flag Facilities. The Air Force plans to replace multiple facilities at Silver Flag destroyed during Hurricane Michael (Figure 4-1). Proposed facilities include a vehicle maintenance shop (11,920 square feet), base engineer covered storage facility (10,000 square feet), and technical training classroom (10,072 square feet), plus site work and utilities (Air Force, 2019b). These new facilities would be approximately 0.2 mile east of the proposed fire R&D construction site at Silver Flag. Construction is anticipated to begin in late 2023 and last for approximately two years. The Silver Flag facilities replacement was analyzed as a project in the Rebuild EA; a FONSI/FONPA was signed on April 1, 2020 (Air Force, 2020a).

New AFCEC Campus. The Air Force plans to replace AFCEC RDT&E facilities originally in the 9700 Area that were destroyed during Hurricane Michael with a new campus. Proposed facilities include the following: RDT&E research facility, ballistics laboratory, vehicle maintenance facility, heavy equipment storage, vehicle equipment yard, tent city laydown, robotics range, gate house, land houses, canopy, vehicle inspection port, overwatch position, security fence, roadway with serpentines, active barriers, material testing runway, material test runway support building, cyber operations building, robotics range control support building, energy and utility range control support, and supporting infrastructure. Total project area is approximately 883,000 square feet, plus site work and utilities (Air Force, 2019c). The new AFCEC campus would be at the corner of U.S. Highway 98 and Farmdale Drive (Figure 4-2), which is approximately 1.25 miles south of the proposed fire R&D construction site at Silver Flag. Construction is anticipated to begin in late 2023 and last for approximately two years. The new AFCEC campus was analyzed as a proposed project in the 9700 Area in the Rebuild EA; a FONSI/FONPA was signed on April 1, 2020 (Air Force, 2020a).



(Air Force, 2020a)

Figure 4-1. Cumulative Actions at Silver Flag



(Air Force, 2020a)

Figure 4-2. Cumulative Actions at New 9400 Area with Fire Station

New Fire Station. The Air Force plans to construct a replacement fire station facility to house fire protection vehicles, equipment, and operating personnel of the base fire department. Satellite Fire Station #4 sustained severe damage during Hurricane Michael. Consequently, facilities at the main base cantonment area are temporarily designated with emergency response, which does not meet required five-minute response times. The new satellite fire station would meet response times to Silver Flag and AFCEC RDT&E facilities. Total project area would be 6,356 square feet (Air Force, 2019d). The planned location for the new fire station is adjacent to the new AFCEC campus (Figure 4-2). Construction is anticipated to begin in late 2023 and last for approximately two years. The new fire station was analyzed as a proposed project in the 9700 Area in the Rebuild EA; a FONSI/FONPA was signed on April 1, 2020 (Air Force, 2020a).

Other Hurricane Recovery and Installation Development. The Air Force prepared the Rebuild EA to facilitate the rapid reconstruction of buildings, infrastructure, and natural resources following Hurricane Michael. In addition to the facilities previously described in this cumulative discussion (i.e., Silver Flag facilities, new AFCEC campus in the 9700 Area, and a new fire station in the 9700 Area), the Air Force proposed redevelopment actions in the 2000 Area, 8500 Area, Flightline Area, Support Area, and Multi-Area (i.e., projects that traversed more than one of the preceding areas). These other hurricane recovery projects are summarized in Table 4-1. Most of these redevelopment activities are focused along the Flightline and Support Areas. The FONSI/FONPA was signed on April 1, 2020 (Air Force, 2020a), and redevelopment activities are underway.

F-35A Wing Beddown. Part of the immediate response following Hurricane Michael were the emergency relocations of the F-22 aircraft and the 95th Fighter Squadron from Tyndall AFB to Joint Base Langley-Eustis, Virginia; Joint Base Elmendorf-Richardson, Alaska; Joint Base Pearl Harbor-Hickam, Hawaii; and Nellis AFB, Nevada. The F-22A Formal Training Unit and its T-38 aircraft were temporarily relocated from Tyndall AFB to Eglin AFB. The Air Force signed a Record of Decision to permanently relocate the F-22 Formal Training Unit and T-38 aircraft to Joint Base Langley-Eustis in 2021. This reassignment of the F-22 Formal Training Unit provides mission capacity at Tyndall AFB.

The Air Force plans to beddown three squadrons of F-35A aircraft (Air Force, 2021f). The first aircraft are anticipated to arrive beginning in 2023 and occurring through 2026. Facilities and infrastructure to support the F-35 beddown were considered in conjunction with flightline development as presented in the Rebuild EA. Construction for hangars, parking apron, maintenance, and other F-35 facilities would be approximately 1.1 million square feet along the flightline and in the munitions storage area (Air Force, 2020g). Facility renovation work has already begun at Tyndall AFB, and a major construction award was issued in spring 2022 (Humphries, 2022). Additional personnel will support the F-35 beddown (2,100 active-duty personnel, 13 civilians, and 87 base operating support personnel). Dependents would also increase (approximately 2,992 dependents including 1,100 school-aged children). Personnel are anticipated to arrive beginning in 2022 with incremental increases over the next three years. The anticipated increase in F-35 billets is counter to the loss from the F-22 Formal Training Unit relocation (1,400 active-duty billets and 1,904 dependents including 700 school-aged children) (Air Force, 2020g).

The Air Force prepared an EIS for this beddown (Air Force, 2020g), and signed a Record of Decision (Air Force, 2021f). The F-35 EIS contained detailed evaluation resulting from construction, changes in personnel, and changes in mission and airfield use.

Table 4-1. Summary of Other Hurricane Recovery and Installation Development Projects

Planning Area	Project Description	Approximate Footprint	Anticipated Timeframe	Approximate Distance from Proposed Action
2000 Area	Construct new facilities at marina and new recreational facilities.	461,060 square feet	2023–2025	9.1–10.2 miles
8500 Area	Construct subscale drone facility complex for 53 WEG.	142,990 square feet	2023–2025	2.7 miles
Flightline Area	Construct numerous facilities including a 53 WEG hangar, 53 WEG headquarters, gate complexes, Operations Support Squadron facility, 53 WEG parking apron, aerospace & operational physiology facility, special purpose vehicle maintenance, Operations Group/Maintenance Group headquarters, deployment center/flightline dining/AAFES, and munitions storage facilities.	825,480 square feet	2021–2022	5–5.5 miles
Support Area	Construct numerous facilities including civil engineer contracting USACE complex; Logistics Readiness Squadron complex; emergency management, emergency operations center, and alternative command post; Security Forces Squadron mobility storage facility; new lodging facilities; new dormitory complex; new child development center; 325 FW headquarters building; chapel; community commons facility; and gate complexes.	1.7 million square feet	2021–2025	6.4 miles

Planning Area	Project Description	Approximate Footprint	Anticipated Timeframe	Approximate Distance from Proposed Action
Multi-Area	Construct airfield drainage.	72,649 linear feet	2021–2023	5 miles
Multi-Area	Construct site development and utilities that align with placement of new facilities. Includes electrical, water, wastewater, stormwater, communications, gas main, security fence, and roadways.	333,160 linear feet of utilities 141,340 square yards of roadway	2021–2022	Various, includes utilities within Silver Flag 0.3 mile away, extending to areas 10.4 miles away
Multi-Area	Demolish 264 buildings.	>1.9 million square feet	2020+	Various across the entire base, includes at least five facilities in Silver Flag, notably Building 9443 within the project area.

(Air Force, 2020a)

Key: 325 FW = 325th Fighter Wing; 53 WEG = 53d Weapons Evaluation Group; AAFES = Army and Air Force Exchange Service; USACE = U.S. Army Corps of Engineers.

4.2 Cumulative Effects Analysis

4.2.1 Air Quality

Relevant past, present, and reasonably foreseeable future actions that would occur in Bay County would include construction, demolition, and renovation activities associated with an operational military installation. Individual construction activities would have short-term, minor-to-moderate impacts on air quality from fossil fuel combustion and fugitive dust. However, most construction projects would be temporary, and emissions would be minor. Therefore, it is unlikely that multiple construction activities collectively would result in significant long-term cumulative impacts.

4.2.2 Land Use

The Proposed Action would not have significant cumulative impacts regarding land use when considered with other reasonably foreseeable future actions. There are several nearby planned construction actions on Tyndall AFB, such as replacement of Silver Flag facilities, several new AFCEC RDT&E facilities, a new fire station, and others that would have similar types of impacts as those of the Proposed Action. Furthermore, F-35 aircraft operations would change the noise contours, which affects compatible land uses. The land use classification at the Silver Flag area is designated as Training, which corresponds to the current and proposed buildings and use of the area. Noise, safety, and potential for ground disturbance of TU539P-Sub would be addressed and managed in accordance with the appropriate federal, state, and Air Force regulations. Land uses would continue to be compatible within Tyndall AFB boundaries and in the adjacent community.

4.2.3 Earth Resources

The projects described in Section 4.1 would involve grading and other types of soil disturbance associated with construction, demolition, and establishing appropriate airfield drainage. The activities could potentially cause erosion, soil destabilization, and related impacts to wetlands and surface waters in the vicinity of the Silver Flag location. In addition, the projects would result in an overall increase in impervious surface area and stormwater runoff. Increased personnel resulting from the F-35A Wing beddown could increase vehicle operations and the potential for spills and leaks of petroleum products. Tyndall AFB would be required to obtain a stormwater construction permit prior to starting any activities that would disturb one acre or more of total land area. Construction contractors would be required to develop a SWPPP specific to each site, which would identify erosion prevention and control measures to be implemented during site preparation and construction activities. Therefore, the Proposed Action, when combined with other past, present, and reasonably foreseeable projects, would result in a minor contribution to adverse cumulative impacts on regional soils.

4.2.4 Water Resources

Cumulative impacts on water resources would occur from other construction projects, maintenance and repair activities, and other ground disturbance, with impacts from stormwater runoff and from dredge and fill activities. Given the amount of ongoing rebuilding at Tyndall AFB and within Bay County, other impacts on water resources are likely; however, these impacts would be minimized through best management practices and permit requirements.

The 2020 Rebuild EA identified up to 134.9 acres of wetlands, 120,300 linear feet of drainage ditches, 15.8 acres of stormwater management pond/open water/drainage features, and 126.9 acres of floodplains that would be impacted (Air Force, 2020a). The F-35 EIS beddown identified up to 3.3 acres of wetlands and 0.35 acre of floodplains that would be impacted from facility construction (Air Force, 2020g).

Mitigations for these impacts are specified during individual project final design for each project, but would include NPDES permits, Clean Water Act Section 404 permits, State 404 Program permits, Clean Water Act Section 401 water quality certifications, and Environmental Resource Permits. Floodplain mitigation would also be completed during site design to provide compensatory storage; facilities would also be elevated about the base flood elevation.

Although the Proposed Action would result in minor contributions to adverse cumulative impacts on wetlands (1.23 acres of wetlands and 0.05 acre of other surface water), significant cumulative impacts are not expected due to mitigation and the implementation of other permit requirements and management actions.

4.2.5 Biological Resources

Other construction projects that involve ground disturbance and construction would have the potential to affect biological resources through disturbance and conversion of vegetation and habitat. Construction projects would generate noise, which could directly or indirectly affect wildlife species. Individually, impacts on biological resources under each project would be dependent on the biological community where construction occurs, and would vary with the size, intensity, and duration of construction activity.

The 2020 Rebuild EA did not quantify impacts on habitat but determined impacts would not be significant due to the availability of similar habitat. Specific mitigations in that EA and FONSI/FONPA included the following: avoiding work during shorebird nesting season, where feasible; reducing lighting impacts on sea turtles; avoiding populations of telephus spurge, if practicable; suspending work if the indigo snake is encountered; adhering to appropriate measures to control Florida black bear populations; and conducting gopher tortoise surveys (Air Force, 2020a). The F-35 EIS beddown identified up to 8.5 acres of forested and wetland habitat impacted from facility construction, which is 0.03 percent of available habitat (Air Force, 2020g). Given the ample habitat on Tyndall AFB, wildlife would be able to retreat if disturbed by increased human activities. Other projects that involve disturbance of wetlands (see Section 4.2.4 above) would adhere to federal and state regulations and permits, as required, which would minimize impacts on the biological environment. Cumulative projects that would develop undisturbed land would contribute to the cumulative loss of vegetation and wildlife habitat. However, management and minimization measures would protect biological resources on Tyndall AFB to the extent practicable.

AFCEC secured $10 million of Readiness and Environmental Protection Integration (REPI) Program funds in response to reshaping Tyndall AFB following Hurricane Michael and preparing Tyndall AFB to receive the F-35A squadrons. The REPI Program combats encroachment that can limit the military mission by removing or avoiding land use restrictions at the installation. In exchange, partnerships across the federal, state, and local governments and private conservation groups share the costs of acquiring easements or land interests to preserve compatible land uses and natural habitats. In the case of Tyndall AFB, the REPI funds will support the construction of living shoreline and submerged shoreline and the creation of oyster reef habitat, all of which would protection the shoreline along the installation's drone runway to enhance coastal resiliency and shoreline habitat (Warns, 2021). The planned REPI projects will provide overall benefits to Tyndall AFB wetlands and habitat, including for some of the listed species that would be affected by the loss of habitat under this Proposed Action.

Implementation of the Proposed Action, combined with past, present, and reasonably foreseeable future projects, would not result in significant cumulative impacts within the study area.

4.2.6 Hazardous Materials and Wastes and Contaminated Sites

Other construction and demolition activities would increase short-term use and storage of hazardous materials, as well as the short-term generation of hazardous wastes. Common hazardous materials and wastes for construction activities would be similar to those described in Section 3.6.3.1. Changes in based aircraft could also change the types, quantities, and specific locations of hazardous materials used, and wastes generated, associated with painting, abrasives, aircraft cleaning processes, and aircraft and aerospace ground equipment POL and fluids. The F-35 EIS determined that fuel consumption associated with that aircraft's beddown would not increase overall fuel consumption beyond peak levels already experienced pre-hurricane (Air Force, 2020g). Cumulatively, the procedures already established in the installation's hazardous materials management plans, hazardous waste management plans, and emergency response and spill contingency plans would continue to properly manage risks associated with hazardous materials and wastes in accordance with applicable laws and regulations.

Individual construction and demolition projects could be sited within an active Environmental Restoration Program site or an area undergoing PFAS investigation. Other special hazards, such as asbestos or lead-based paint, could also be present. Typically, the possible risks associated with encountering contaminated media or spreading contamination would be addressed on a site-specific basis, and guidelines, policies, or restrictions would be included in all construction contracts. Individual projects within a known or suspected area of contamination would be required to address the removal, handling, and disposal of all contaminated waste streams in accordance with applicable laws and regulations. Construction personnel would be expected to comply with all established safety procedures. Construction within contaminated sites would not be expected to have adverse cumulative effects.

4.2.7 Socioeconomics

Relevant past, present, and reasonably foreseeable future actions that would occur in the Bay County study area would include construction, demolition, and renovation activities associated with an operational military installation. Individual construction activities would have short-term, minor to moderate, beneficial effects through the increased demand for construction workers and the procurement of goods and services. However, multiple and consistent construction activities collectively would provide long-term beneficial cumulative impacts.

4.2.8 Environmental Justice and Protection of Children

The Proposed Action would not result in disproportionately high and adverse impacts on environmental justice populations or disproportionate environmental health and safety risks to children, and therefore, would not contribute to cumulative impacts to environmental justice communities or children.

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APPENDIX A PUBLIC AND AGENCY COMMENTS

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
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103 Mississippi Road
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Mr. Chris Stahl, Coordinator
Office of Intergovernmental Programs
Department of Environmental Protection
3900 Commonwealth Blvd, Mail Station 47
Tallahassee FL 32399

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Mr. Stahl

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations. The Proposed Action is needed because fire R&D facilities are mission essential for training and researching field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, Air Force Civil Engineer Center (AFCEC) cannot effectively conduct fire training activities.

The Proposed Action at the Silver Flag location and the No Action Alternative are being considered in the EA. The Silver Flag location (see Attachment 1 and 2) is within the installation property and currently provides contingency combat support training to multiple Air Force specialties. Two replacement facilities would be built to consolidate fire R&D mission activities at the Silver Flag location. The proposed site would be built with approximately 74,200 square feet of structures, pavements, and associated infrastructure. Once installed, utilities would be connected to existing service lines. The site would be cleared and graded for

construction and stormwater drainage (approximately 4.5 acres total). Site design is not yet complete, but approximately 1.3 acres of wetlands have been delineated within the total site; up to 1.1 acres may be directly affected by pavements or stormwater infrastructure.

As part of the NEPA process, the Air Force is considering reasonable alternatives. Two location alternatives were initially considered but eliminated from detailed evaluation. The Air Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on coastal resources protected under the state of Florida's Coastal Zone Management Program.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

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Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

DEPARTMENT OF THE AIR FORCE
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TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
103 Mississippi Road
Tyndall AFB FL 32403-5014

Ms. Diana K. Pepe
Northwest Region Conservation Biologist
Florida Fish and Wildlife Conservation Commission
5300 High Bridge Rd
Quincy FL 32351

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Ms. Pepe

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations. The Proposed Action is needed because fire R&D facilities are mission essential for training and researching field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, Air Force Civil Engineer Center (AFCEC) cannot effectively conduct fire training activities.

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construction and stormwater drainage (approximately 4.5 acres total). Site design is not yet complete, but approximately 1.3 acres of wetlands have been delineated within the total site; up to 1.1 acres may be directly affected by pavements or stormwater infrastructure.

As part of the NEPA process, the Air Force is considering reasonable alternatives. Two location alternatives were initially considered but eliminated from detailed evaluation. The Air Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on any fish or wildlife resources regulated by the Florida Fish and Wildlife Conservation Commission (FWC). The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA. When completed, the draft EA will be submitted to your office for review and comment.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

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Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
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103 Mississippi Road
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Mr. Noah Silverman
NEPA Coordinator, Southeast Regional Office
NOAA Fisheries
263 13th Ave S
St. Petersburg FL 33701

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Mr. Silverman

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations. The Proposed Action is needed because fire R&D facilities are mission essential for training and researching field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, Air Force Civil Engineer Center (AFCEC) cannot effectively conduct fire training activities.

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As part of the NEPA process, the Air Force is considering reasonable alternatives. Two location alternatives were initially considered but eliminated from detailed evaluation. The Air Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on any habitat or fisheries resources regulated by NOAA Fisheries. The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA. When completed, the draft EA will be submitted to your office for review and comment.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

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Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

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Tallahassee FL 32399-0250

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Ms. Lotane

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on historic properties including archaeological resources, architectural resources, traditional cultural properties, or other cultural resources. Separate consultation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR 800.2(c)(2)(ii) will be initiated at a later date.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

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Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

DEPARTMENT OF THE AIR FORCE
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415 N Richard Jackson Blvd, Suite 411
Panama City FL 32407-3887

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Sir or Madam

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations. The Proposed Action is needed because fire R&D facilities are mission essential for training and researching field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, Air Force Civil Engineer Center (AFCEC) cannot effectively conduct fire training activities.

The Proposed Action at the Silver Flag location and the No Action Alternative are being considered in the EA. The Silver Flag location (see Attachment 1 and 2) is within the installation property and currently provides contingency combat support training to multiple Air Force specialties. Two replacement facilities would be built to consolidate fire R&D mission activities at the Silver Flag location. The proposed site would be built with approximately 74,200 square feet of structures, pavements, and associated infrastructure. Once installed, utilities would be connected to existing service lines. The site would be cleared and graded for

construction and stormwater drainage (approximately 4.5 acres total). Site design is not yet complete, but approximately 1.3 acres of wetlands have been delineated within the total site; up to 1.1 acres may be directly affected by pavements or stormwater infrastructure.

As part of the NEPA process, the Air Force is considering reasonable alternatives. Two location alternatives were initially considered but eliminated from detailed evaluation. The Air Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on wetland or water resources protected under Clean Water Act.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

CINTRON.JOSE.J.1182275146

Digitally signed by CINTRON.JOSE.J.1182275146
Date: 2022.09.20 10:40:39 -05'00'

JOSÉ CINTRON, GS-13, DAF

Sent via email to: saj-rd-n@usace.army.mil

Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
103 Mississippi Road
Tyndall AFB FL 32403-5014

Ms. Catrina Martin
Supervisor, Environmental Review
U.S. Fish and Wildlife Service
1601 Balboa Ave
Panama City FL 32405

Re: Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Dear Ms. Martin

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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construction and stormwater drainage (approximately 4.5 acres total). Site design is not yet complete, but approximately 1.3 acres of wetlands have been delineated within the total site; up to 1.1 acres may be directly affected by pavements or stormwater infrastructure.

As part of the NEPA process, the Air Force is considering reasonable alternatives. Two location alternatives were initially considered but eliminated from detailed evaluation. The Air Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on any fish or wildlife resources regulated by the U.S. Fish and Wildlife Service. The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA. When completed, the draft EA will be submitted to your office for review and comment.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Coastal Consistency Determination. When completed, the draft EA will also be submitted to the State Clearinghouse for review and comment. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2022.09.20 10:41:38 -05'00'

JOSÉ CINTRON, GS-13, DAF

Sent via email to: catrina_martin@fws.gov

Attachments:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Billy Cypress, Chairman
Miccosukee Tribe of Indians of Florida Tamiami Station
PO Box 440021
Miami FL 33144

Dear Chairman Cypress

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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Force considered siting the proposed fire R&D facilities in the new AFCEC Campus south of the Silver Flag location. However, safety off-sets for controlled fire studies cannot be achieved at this location, so this alternative was dismissed. The Air Force also considered replacing the four damaged fire-testing buildings in their former locations at Silver Flag, Sky X, and the original 9700 area. However, these areas are spread out among multiple facilities, and two of these former buildings are within the 100-year floodplain, so this alternative was also dismissed.

During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on archaeological resources, architectural resources, traditional cultural properties, or other cultural resources. The Air Force is not aware of any historic properties of religious or tribal significance located within the project area (refer to Attachment 2, Silver Flag Location Map) on Tyndall AFB. In accordance with Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force would like to initiate government-to-government consultation regarding the Fire R&D Facilities.

Please let us know if you are aware of any properties of cultural and religious significance to Miccosukee Tribe of Indians of Florida within or in the vicinity of the project area you believe this undertaking might adversely affect. Additionally, as a stakeholder in the environmental analysis process, the Air Force requests your input in identifying any issues or areas of concern you feel should be addressed.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Section 106 consultation materials, though we will accept responses provided after 30 days. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

WATKINS.GEORGE.R.1086349333 Digitally signed by WATKINS.GEORGE.R.1086349333 Date: 2022.09.20 08:40:10 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
kevind@miccosukeetribe.com;
hopel@miccosukeetribe.com

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

David Hill, Principal Chief
Muscogee (Creek) Nation
PO Box 580
Okmulgee OK 74447

Dear Principal Chief Hill

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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Please let us know if you are aware of any properties of cultural and religious significance to Muscogee (Creek) Nation within or in the vicinity of the project area you believe this undertaking might adversely affect. Additionally, as a stakeholder in the environmental analysis process, the Air Force requests your input in identifying any issues or areas of concern you feel should be addressed.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Section 106 consultation materials, though we will accept responses provided after 30 days. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

WATKINS.GEORGE.R.1086349333

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Date: 2022.09.20 08:42:12 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
dhill@mcn-nsn.gov

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Stephanie A. Bryan
Tribal Chair
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore AL 36502

Dear Tribal Chair Bryan

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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Please let us know if you are aware of any properties of cultural and religious significance to Poarch Band of Creek Indians within or in the vicinity of the project area you believe this undertaking might adversely affect. Additionally, as a stakeholder in the environmental analysis process, the Air Force requests your input in identifying any issues or areas of concern you feel should be addressed.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Section 106 consultation materials, though we will accept responses provided after 30 days. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

WATKINS.GEORGE.R.1086349333
Digitally signed by WATKINS.GEORGE.R.1086349333
Date: 2022.09.20 08:44:18 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
THPO@pci-nsn.gov

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Lewis J. Johnson
Principal Chief
Seminole Nation of Oklahoma
PO Box 1498
Wewoka OK 74884

Dear Principal Chief Johnson

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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Please let us know if you are aware of any properties of cultural and religious significance to Seminole Nation of Oklahoma within or in the vicinity of the project area you believe this undertaking might adversely affect. Additionally, as a stakeholder in the environmental analysis process, the Air Force requests your input in identifying any issues or areas of concern you feel should be addressed.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Section 106 consultation materials, though we will accept responses provided after 30 days. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

WATKINS.GEORGE.R.1086349333 Digitally signed by WATKINS.GEORGE.R.1086349333 Date: 2022.09.20 08:45:17 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
Lincoln.s@sno-nsn.gov,
Yahola.b@sno-nsn.gov

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

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

Dear Chairman Osceola

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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Sincerely

WATKINS.GEORGE.R.1086349333
Digitally signed by WATKINS.GEORGE.R.1086349333
Date: 2022.09.20 08:46:02 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
THPOCompliance@semtribe.com

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Colonel George R. Watkins
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Ryan Morrow
Town King
Thlopthlocco Tribal Town
PO Box 188
Okemah OK 74859-0188

Dear Town King Morrow

The United States Air Force is currently preparing an Environmental Assessment (EA) for construction of Fire Research and Development (R&D) Facilities at Tyndall Air Force Base (AFB), Bay County, Florida. The EA analyzes the potential environmental impacts of the Proposed Action, and is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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During the EA process, the Air Force will determine whether the Proposed Action would have adverse impacts on archaeological resources, architectural resources, traditional cultural properties, or other cultural resources. The Air Force is not aware of any historic properties of religious or tribal significance located within the project area (refer to Attachment 2, Silver Flag Location Map) on Tyndall AFB. In accordance with Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force would like to initiate government-to-government consultation regarding the Fire R&D Facilities.

Please let us know if you are aware of any properties of cultural and religious significance to the Thlopthlocco Tribal Town within or in the vicinity of the project area you believe this undertaking might adversely affect. Additionally, as a stakeholder in the environmental analysis process, the Air Force requests your input in identifying any issues or areas of concern you feel should be addressed.

The Air Force respectfully requests your written comments and other input on the Proposed Action within 30 days of receipt of this letter so they can be considered during preparation of the draft EA and Section 106 consultation materials, though we will accept responses provided after 30 days. If you have any questions or require additional information, please contact Tyndall AFB's Point of Contact, Mr. Edwin Wallace, via email at edwin.wallace.1@us.af.mil, or via telephone at (850) 283-2714.

Sincerely

WATKINS.GEORGE.R.1086349333

Digitally signed by WATKINS.GEORGE.R.1086349333
Date: 2022.09.20 08:46:58 -05'00'

GEORGE R. WATKINS, Colonel, USAF
Commander

Enclosures:
1. Tyndall AFB Location Map
2. Silver Flag Location Map

Sent via email to:
thpo@tttown.org

LOCALiQ

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Daily Commercial | Ocala StarBanner
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Northwest Florida Daily News

PO Box 631244 Cincinnati, OH 45263-1244

PROOF OF PUBLICATION

Mary Young
Marstel-Day LLC
10708 Ballantraye DR # 208
Fredericksburg VA 22407-4701

STATE OF FLORIDA, COUNTY OF BAY

The Panama City News Herald, a newspaper printed and published in the city of Panama City, and of general circulation in the County of Bay, State of Florida, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue dated or by publication on the newspaper's website, if authorized, on:

09/28/2022

and that the fees charged are legal.
Sworn to and subscribed before on 09/28/2022

Legal Clerk

Notary, State of WI, County of Brown

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SARAH BERTELSEN
Notary Public
State of Wisconsin

Early Public Notice of a Proposed Activity in Wetlands at Tyndall Air Force Base, Florida

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) to consider the potential consequences to the human and natural environment associated with the reconstruction of Air Force Civil Engineer Center (AFCEC) fire research and development (R&D) facilities at Tyndall Air Force Base (AFB), Florida.

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations.

The Proposed Action is needed because fire R&D facilities are mission essential for training and researching field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, AFCEC cannot effectively conduct fire training activities.

Construction of portions of the Proposed Action may impact wetlands and is therefore subject to the requirements and objectives of Executive Order (EO) 11990, "Protection of Wetlands." Efforts are being made during the design phase to avoid and minimize these impacts. This notice is to comply with Section 2(b) of EO 11990, which requires early notice for actions that could affect wetlands.

The Proposed Action at the Silver Flag location and the No Action Alternative are being considered. The Silver Flag location is within the installation property and currently provides contingency combat support training to multiple Air Force specialties. Two replacement facilities would be built to consolidate fire R&D mission activities at the Silver Flag location. The proposed site would be built with approximately 74,200 square feet of structures, pavements, and associated infrastructure. Once installed, utilities would be connected to existing service lines. The site would be cleared and graded for construction and stormwater drainage (approximately 4.5 acres total). Site design is not yet complete, but approximately 1.3 acres of wetlands have been delineated within the total site; up to 1.1 acres may be directly affected by pavements or stormwater infrastructure.

The Air Force is seeking advance public comment on the proposed project to determine if there are any public concerns regarding the project's potential impacts. The full EA will be available for public review in the spring of 2023. Please provide written comments to: 325th Civil Engineer Squadron, 103 Mississippi Road, Bldg 36233, Tyndall AFB, FL 32403; or by email: edwin.wallace.1@us.af.mil. Written comments will be accepted for 30 days from the publication of this notice.

NF-32356650

From:	State_Clearinghouse
To:	jose.cintron.1@us.af.mil; edwin.wallace.1@us.af.mil
Cc:	Mary Young
Subject:	SAI# FL202209289603C
Date:	Thursday, September 29, 2022 12:01:55 PM

External E-mail - do not click links or open attachments unless you recognize the sender

To: Jose Cintron,

Re: Florida State Clearinghouse Project Review

Project SAI#: FL202209289603C
Date Received: 09/28/22
Project Description: DEPARTMENT OF DEFENSE, U.S. AIR FORCE, ENVIRONMENTAL ASSESSMENT FOR FIRE RESEARCH AND DEVELOPMENT FACILITIES, TYNDALL AIR FORCE BASE, BAY COUNTY, FLORIDA.

The Florida State Clearinghouse has received the above-referenced project and has forwarded it to the appropriate state agencies for review. Please refer to the State Application Identifier (SAI) number in all correspondence with the Florida State Clearinghouse regarding this project. Applicants should expect to receive their State Clearance Letter 30-60 days from the received date. Additional information can be found at http://dep.state.fl.us/secretary/oip/state_clearinghouse/manual2.htm.

Please submit all future project applications and correspondence by email to state.clearinghouse@dep.state.fl.us. If your submittal is too large to send via email or if you need other assistance, contact Chris Stahl at (850) 717-9076.

From: Yarbrough, Lisa <lisa_yarbrough@fws.gov>
Sent: Wednesday, October 5, 2022 11:45 AM
To: WALLACE, EDWIN B GS-12 USAF ACC 325 CES/CEIEC <edwin.wallace.1@us.af.mil>
Cc: CINTRON, JOSE J GS-13 USAF ACC 325 CES/CEIE <jose.cintron.1@us.af.mil>; Martin, Catrina M <catrina_martin@fws.gov>; Kaeser, Melanie J <melanie_kaeser@fws.gov>; Kelly, Patricia <patricia_kelly@fws.gov>
Subject: [Non-DoD Source] Tyndall AFB Fire Research and Development Facilities

Mr. Wallace,

The U.S. Fish and Wildlife Service (Service) has received your letter requesting our comments on the proposed Fire Research and Development Facilities Environmental Assessment at Tyndall AFB. The Service does not have any comments at this time and look forward to receiving Tyndall AFB's request for Endangered Species Act section 7 consultation request.

For Coastal Consistency Determinations and Coastal Barrier Resources Act (CBRA), please contact Patty Kelly (cc'ed).

Thank you,

Lisa Yarbrough
Fish and Wildlife Biologist
Florida Ecological Services Field Office
Location: Panama City Office
1601 Balboa Ave, Panama City FL
850-769-0552 ext. 45225 (office)
850-640-8383 (cell)
Florida Ecological Services Office | U.S. Fish & Wildlife Service (fws.gov)
<https://www.fws.gov/office/florida-ecological-services>

From: Walsh, Kristal <Kristal.Walsh@MyFWC.com>
Sent: Wednesday, October 26, 2022 4:41 PM
To: WALLACE, EDWIN B GS-12 USAF ACC 325 CES/CEIEC <edwin.wallace.1@us.af.mil>
Cc: Irving, Robert <Robert.Irving@MyFWC.com>; Cucinella, Josh <Josh.Cucinella@MyFWC.com>; DiGruttolo, Laura <Laura.DiGruttolo@MyFWC.com>; Schad, Morgan <Morgan.Schad@MyFWC.com>
Subject: [Non-DoD Source] Environmental Assessment for Fire Research and Development Facilities, Tyndall Air Force Base, Florida

Good afternoon, Edwin. It was good to speak to you last week about this project's scoping request. As we discussed on the phone, we will defer final comments to the time of the Draft EA review. In the meantime, if you have any questions or need additional technical assistance, please do not hesitate to contact me. Kristal

Kristal Cobb Walsh, Biologist IV
Office of Conservation Planning Services
Division of Habitat and Species
Florida Fish and Wildlife Conservation Commission
(850) 851-8065

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

CORD BYRD
Secretary of State

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
103 Mississippi Road
Tyndall Air Force Base, Florida 32403-5014

November 7, 2022

Re: DHR Project No.: 2021-1644
Proposed Environmental Assessment for the Construction of Four Fire Research and Development Facilities at the Silver Flag Area
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

This office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in 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 *36 CFR Part 800: Protection of Historic Properties*.

Based on the information provided, it is the opinion of this office the proposed undertaking should have no effect on historic properties, provided that the Tyndall Air Force Base makes contingency plans in the case of fortuitous finds or unexpected archaeological discoveries during ground disturbing activities within the project area.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Kelly L Chase
For

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

From: Wheeler, Tracey L CIV USARMY CESAJ (USA) <Tracey.L.Wheeler@usace.army.mil>
Sent: Friday, January 6, 2023 11:26 AM
To: WALLACE, EDWIN B GS-12 USAF ACC 325 CES/CEIEC <edwin.wallace.1@us.af.mil>
Cc: Lovvorn, Lisa S CIV USARMY CESAJ (USA) <Lisa.S.Lovvorn@usace.army.mil>
Subject: SAJ-2022-03068Tyndall Air Force Base Fire Research and Development Facilities

Mr. Wallace,

The U.S. Army Corps of Engineers received your request for a preapplication review of the possible impacts to jurisdictional areas associated with the construction of replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael, and to conduct fire research, testing, and training in these facilities consistent with previous operations. As you stated, an Environmental Assessment is being prepared to address potential impacts.

During initial review of proposed projects being considered under the Hurricane Michael Rebuild efforts, preliminary site visit was conducted at the Silver Flag facility. During the site visit, it was determined that, although there are wetlands subject to regulation under Section 404 of the Clean Water Act, those wetlands within the area shown in the submitted request are located greater than 300 feet from waters subject to the ebb and flow of tide.

On December 17, 2020, the Environmental Protection Agency approved the State of Florida's request to assume administration of a portion of the Clean Water Act Section 404 program. State Assumption is effective as of December 22, 2020. Under Assumption, the U.S. Army Corps of Engineers (Corps) will maintain Section 404 authority over certain waters, referred to as 'retained' waters. Retained waters include those waters that (1) are specifically listed in the Corps' Retained Waters List, (2) waters subject to the ebb and flow of tide, and (3) wetlands adjacent thereto landward to a 300-foot administrative boundary. The Corps carefully reviewed your project location and determined that it falls within State 'assumed' waters . Therefore, the proposed project area would be outside of the regulatory authority of the Corps.

Tracey L. Wheeler
850-287-0138 (cell)
(850) 763-0717 ex 4

APPENDIX B ENVIRONMENTAL RESTORATION PROGRAM SITE CONSTRUCTION GUIDANCE

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

3 August 2021

SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Dear Interim Secretary Hamilton:

Thank you for the opportunity to speak with you on July 21, 2021 regarding permitting requirements for Tyndall AFB reconstruction. I appreciate your support for this continuing effort as the Air Force remains committed to basing three F-35 squadrons at Tyndall starting in the fall of 2023.

The enclosure provides for your review a Memorandum for Record documenting the agreement we reached in our telephone conversation. If you are comfortable that it accurately reflects the terms of our agreement, please sign and return to me to reflect our mutual understanding. I will then return a record copy back to you with both of our signatures. I look forward to continuing to work with you and your team as the Air Force continues to reconstruct Tyndall into a first Twenty-First Century Installation.

Sincerely,

CORRELL.MARK.A.1157490385
Digitally signed by CORRELL.MARK.A.1157490385
Date: 2021.08.03 13:00:13 -04'00'

MARK A. CORRELL, P.E.
Deputy Assistant Secretary of the Air Force
(Environment, Safety, and Infrastructure)

Attachment:
Memorandum for Record

cc:
SAF/IE

MEMORANDUM FOR RECORD

SUBJECT: Soil Management Pursuant to the Tyndall Rebuild Program

Background

1. Following the devastation of Hurricane Michael in October 2018, the Department of the Air Force (Air Force) is executing a rebuild of Tyndall Air Force Base and the beddown of a new F-35 mission.

2. The Air Force has determined that the rebuild and beddown efforts at Tyndall Air Force Base are vitally important to national security, and that those efforts can be accomplished in a manner protective of Florida's environment. Further, the Florida Department of Environmental Protection (FDEP) recognizes the critical importance of the rebuild at Tyndall Air Force Base, both for our national defense strategy and our communities in Northwest Florida.

3. On 26 February 2021, the Air Force made application to the Florida Department Environmental Protection (FDEP) for an Environmental Resources Permit (Permit) for military construction in Zone 1 of Tyndall Air Force Base.

4. The considerations in this Memorandum for the Record (Memorandum) reflect the desire of FDEP to prevent soil from Tyndall Air Force Base that exceeds FDEP's provisional soil cleanup target levels for Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) from being placed off-base, including in any state unlined landfill. They similarly reflect the Air Force's requirements to carry out construction activities consistent with any applicable federal, state, and local requirements to which the United States Government is subject, and Office of the Secretary of Defense and Air Force policies.

Considerations. In accordance with our telephone conversation on July 21, 2021, this Memorandum documents our agreement with the following additional considerations for the Permit as well as any other Environmental Resource Permits associated with the rebuild and beddown activities at Tyndall Air Force Base.

1. While the scope of the Air Force's permit application was limited to Zone 1, the site for purposes of this Memorandum will encompass Tyndall Air Force Base.

2. FDEP will incorporate by reference this Memorandum into any approved Environmental Resource Permit associated with the rebuild and beddown activities at Tyndall Air Force Base, including the Air Force's Permit application dated 26 February 2021 for military construction activities in Zone 1. FDEP will process its approval of the Zone 1 application as quickly as possible based on the existing application content and provisions of this Memorandum.

3. The Air Force will screen for PFOA and PFOS in areas of known releases of Aqueous Film Forming Foam in accordance with Department of Defense and Air Force policy using the U.S. Environmental Protection Agency's online calculator using the reference dose (RFd) of 2E-05 mg.kg-day.

4. Consistent with Air Force guidance and U.S. Army Corps of Engineer (USACE) contract language, soil that meets Air Force screening criteria for PFOS and PFOA, but which may not meet Florida Department of Environmental Protection (FDEP) provisional standards, shall remain on site for unrestricted use. Any on-site location, long-term storage, and (re)use of this soil shall be in accordance with Air Force contract provisions, Air Force requirements, and applicable federal, state, and local regulations to which the United States Government is subject.

5.Soil that does not meet Air Force screening criteria for PFOS/PFOA will be handled in accordance with USACE contract requirements and applicable federal and state regulations.

Shawn Hamilton
Digitally signed by Shawn Hamilton
Date: 2021.08.03 14:04:47 -04'00'

SHAWN HAMILTON
Interim Secretary
Florida Department of Environmental Protection

CORRELL.MARK.A.1157490385
Digitally signed by CORRELL.MARK.A.1157490385
Date: 2021.08.03 13:00:34 -04'00'

MARK A. CORRELL, P.E.
Deputy Assistant Secretary of the Air Force
(Environment, Safety, and Infrastructure)

Environmental Restoration Program Guidelines

Work on ERP Site TU539P-Sub – AFCEC Silver Flag Fire RDT&E

8 November 2021

The project to construct Fire RDT&E facilities adjacent to the AFCEC Aircraft Fire Pit Test Facility is within the boundaries of Environmental Restoration Program (ERP) Site TU539P-Sub and undergoing a PFAS contamination study. The presence of PFAS compounds was confirmed during ERP groundwater sampling in this area by Arcadis U.S., Inc. in 2014.

Construction projects within ERP site boundaries shall be conducted within the following guidelines. To the extent these guidelines conflict with provisions contained within the construction contract, Statement of Work, or approved work plans, those documents control.

1. It is the responsibility of the contractor to fulfill its obligation under 29 CFR 1910.120, Occupational Safety and Health Administration Standards (OSHA), Hazardous Waste Operations and Emergency Response (HAZWOPER), and address the health and safety of its employees associated with construction activities relative to this project.

2. Contaminated soil from excavation or construction activities may be temporarily moved within the IRP site, as long as it is subsequently redeposited in the same excavated area. Soils should be staged on visqueen and shall not leave that IRP site. Best management practices shall be utilized to prevent spreading contamination into previously uncontaminated or less contaminated areas within the IRP site. If soils are to be removed for disposal from the site, they shall be tested prior to disposal or reuse.

3. For disposal, waste soils must be tested utilizing the Toxic Characteristic Leaching Procedure (TCLP), analyzed for characteristic hazardous chemicals (40 CFR 260, Subpart C), and the results provided to Tyndall Restoration Program Manager (RPM) and the 325 Civil Engineer Squadron (CES) Hazardous Waste Program Manager (HWPM) prior to any transportation for proper disposal at an authorized disposal facility or may be conservatively handled as hazardous waste in accordance with appropriate hazardous waste laws and regulations if approved by Tyndall RPM and the 325 CES HWPM or required by the contract or statement of work. Additionally, soils that exhibit a hazardous waste characteristic will be further sampled to determine applicability of Land Disposal Restrictions and any Underlying Hazardous Constituents (40 CFR 268). Copies of transportation and disposal documents (profiles, manifests, bills of lading) must be provided to Tyndall RPM and the 325 CES HWPM. The contractor is responsible for the sampling, profiling, proper handling, and disposal of any contaminated media. Utilize the services of a qualified environmental professional for sampling and testing.

4. Prior to removing soils from an IRP site (from an area within the site, but not known to be contaminated) and reusing those soils as fill in an area other than same excavated area from which the soils were removed, soils shall first be staged in stockpiles of 400 CY within the IRP site, and sampled and analyzed for the same parameters identified in Item 7 below. One composite sample of eight aliquots will be collected from each 400 CY stockpile. Analytical results will be compared to the Florida Department of Environmental Protection (FDEP) residential Soil Cleanup Target Levels (SCTL) to determine acceptability of the proposed material for reuse anywhere on base. Analytical results will be compared to the FDEP industrial SCTL to determine acceptability of the proposed material for reuse along the flightline. Utilize the services of a qualified environmental professional for sampling and testing.

If the remedial goal (RG) is exceeded or if other constituent concentrations in a composite soil sample exceed their respective FDEP residential direct exposure SCTLs, then the stockpile is to be resampled to confirm the constituent(s) that failed. This is to be accomplished by collecting eight discrete soil samples from the approximate locations of the eight aliquots that comprised the initial composite sample. The 400-cy soil stockpile was divided into eight equal sections of 50 cy each (e.g., spokes dividing a wagon wheel). The "A" sample is to be always collected on the north side of the stockpile, and the subsequent samples are to be collected in a clockwise manner. Each discrete sample is to be analyzed only for the constituent(s) that failed. Collection of eight discrete soil samples per soil stockpile (or one sample per 50 cubic yards of soil) is viewed as a conservative approach to confirming the analytical results because it more accurately reflects the constituent concentrations of the soil stockpile by increasing sample density and resolution. If the results of the discrete sampling/resampling indicate four or fewer spokes within the soil stockpile contain a constituent at a concentration that exceeds its FDEP residential direct exposure SCTL, then those 50-cy hotspot spokes should be excavated from the soil stockpile and moved to the waste pad for off-site disposal. The remaining portions/spokes of the stockpile with discrete samples results less than the FDEP residential direct exposure SCTLs can be used as backfill in the excavation areas as appropriate. If more than four spokes contained a constituent at a concentration that exceeded its FDEP residential direct exposure SCTL, then the entire stockpile should be moved to the waste pad for off-site disposal.

5. Documentation of any sampling and testing results, contaminated soil excavation volumes/depths/delineation, and reuse or disposal actions shall be provided in a summary report prepared by the contractor.

6. Construction activities shall avoid damaging or disturbing any monitoring wells (and shall protect wells from the introduction of contaminants (mud/dirt or PVC glue introduced/caps or plugs removed/risers compromised)) that may be located in the construction area. Cost to sample, repair and/or replace damaged wells, as a result of construction, shall be incurred by the construction project. No wells may be abandoned without prior approval of the Tyndall RPM. If wells must be abandoned, they shall be abandoned properly (and/or replacements installed) and surveyed by a Florida licensed water well driller. Monitoring well abandonment or installation documentation shall be provided to Tyndall RPM. Placement of replacement wells will require coordination with Environmental Protection Agency (EPA), FDEP, and Tyndall RPM.

7. Any soils brought on-site and used for backfill should be properly tested or certified clean (with appropriate documentation) to ensure that no contaminants are being applied on-site. The source of backfill should be natural or virgin material (other than the operation of a borrow pit facility) and should be in an area which has not previously been used for commercial or industrial activities. If the soils to be used for backfill are not certified clean with appropriate documentation, testing of the soils shall be required and must include at least one (1) soil sample collected from the borrow source and analyzed for the following parameters:
    - Volatile Organic Compounds (VOCs) per Method 8260
    - Semi-volatile Organic Compounds (SVOCs) [Base/Neutrals (e.g., PAHs, Pesticides, PCBs) and Acid Extractables (e.g., Phenols)] per Methods 8270/8081/8082
    - RCRA metals by Method 6020
    - Petroleum Residual Organics (by FL-PRO)

   Analytical results will be compared to the FDEP residential SCTLs to determine acceptability of the proposed material as clean fill.

8. Contractors must be made aware of the appropriate procedures if any contamination is encountered (i.e. suspicious odors, fuel smells, soil staining, odd soil colors, unfamiliar liquids, buried materials, etc.) at the site. If these conditions are encountered, Tyndall RPM and

325 CES HWPM must be contacted. If discovered, these soils should be separated, stockpiled on, and covered with visqueen until properly tested/disposed.

9. If dewatering is required, the contractor must be prepared to address permitting, handling, storage, characterization, treatment, and disposal of any potentially contaminated dewatering effluent. Dewatering within a groundwater plume may be allowed as long as effluent is allowed to percolate back into the known plume areas (FDEP to approve infiltration plan), use of other approved on-site method(s) of disposition, and/or is disposed of off-site. Before off-site disposal, it must be analyzed for characteristic hazardous chemicals (40 CFR 260, Subpart C) and other constituents as required by treatment/disposal facilities and the results provided to 325 CES HWPM prior to any transportation for proper disposal at an authorized disposal facility.

10. Any equipment that comes in contact with contaminated soils or groundwater shall be properly decontaminated before mobilizing off-site. Any decontaminated fluids must be collected and stored in 55-gallon drums, properly labeled and stored in the manner and not to exceed the time requirements of Resource Conservation Recovery Act (RCRA) and applicable laws on pallets on site until sampled, tested, and disposed of at a proper disposal facility.

AFFF-Related Waste Management

The below guidance addresses AFFF-related waste streams that result from Air Force responses to releases of C6 and legacy C8 formulations of AFFF product resulting from a spill, accidental release, emergency response, fire training activities, environmental investigations, and management of AFFF (e.g. management and disposal of legacy products).

Determine media-specific treatment / disposal decision points

In general, containerize and characterize Aqueous Film Forming Foam (AFFF)-related waste to determine appropriate disposal method. Handling of all regulated co-contaminants in AFFF-related waste must comply with applicable federal and state promulgated standards. If other contaminants of concern (COCs) exceeding regulatory standards are identified in the waste, the waste will be managed to address the regulated COC according to applicable legal requirements. Refer to the AFFF-Related Disposal Determination Table (see below) for preferred and alternate methods of treatment/disposal and in the following text:

Evaluate media-specific final disposition and treatment technology options before final disposition:

1. Return small quantities of solid and liquid Investigation Derived Waste (IDW) below the Regional Screening Levels (RSL) or Lifetime Health Advisory (LHA) respectively, to source location at point of generation.

- Tyndall AFB has determined 50 gallons or less of IDW is to be considered a small quantity. Avoid leaving mounded soil or standing liquid when returning IDW to its source location.
- As a best management practice, containerize, sample and store AFFF-related waste generated from environmentally, culturally, and/or mission sensitive areas prior to disposal.
- Installation Remedial Project Manager (RPM) to determine, on a case-by case basis, if small quantity IDW is feasible to return to the source location at the point of generation without sampling, based on site specific conditions and best engineering judgement (avoid leaving mounded or standing liquid).

2. Return large quantities, 50 gallons or more, of solid and liquid waste below the RSL or LHA, depending on the contaminant, to its source location at point of generation. Recovered groundwater from dewatering activities shall be sampled and analyzed at a certified laboratory at the influent and effluent locations of the dewatering and /or treatment systems at a frequency of 10,000 gallons or less. Large quantities of soil spoil shall be evaluated and sampled as described in Item 4 above.

- As an Air Force (AF) preference, large quantities of liquid AFFF waste should be characterized and treated, using either Granular Activated Carbon (GAC), ion exchange, or other approved treatment technology to below the LHA, before returning it to its source location at the point of generation.
- Alternative on-site (next to the point of generation, within the MILCON-rebuild Zone, or within an approved disposal area) disposal options may be approved for use. Contractor shall coordinate with the AF and FDEP to ensure regulatory compliance.
- Treated and/or non-treated dewatering effluent may be discharged to stormwater drain under permitted conditions. This action would be considered an on-site disposal option.

3. Treatment (liquid waste streams only). AFFF-contaminated liquid waste may be treated on-site, (next to the point of generation, within the MILCON-rebuild Zone, and/or within an approved on-base waste accumulation area and/or treatment area) prior to discharge. Effluent must achieve reduction to less than or equal to LHA and/or applicable state or local promulgated standards. If other COCs exceeding regulatory standards are identified in the waste, the waste will be managed to address the regulated COC according to applicable legal requirements.

4. RCRA Subtitle D landfill. Used for disposal of non-hazardous municipal, industrial, and construction and demolition (C&D) solid waste. Coordinate with the disposal facility for waste acceptance.

5. RCRA Subtitle C landfill. Used for disposal of hazardous solid waste. AFFF product or if AFFF-related waste is co-mingled with another COC with concentrations exceeding regulatory standards and regulated hazardous waste was identified and properly managed for disposal. Coordinate with the disposal facility for waste acceptance.

On-site (next to the point of generation, within the MILCON-rebuild Zone, and/or within an approved on-base waste accumulation area and/or treatment area) disposal options approved by the Air Force and FDEP

Groundwater

- Re-infiltration. Re-infiltration of produced groundwater may be an option for managing recovered groundwater. Contractor shall coordinate between the AF and FDEP to ensure regulatory compliance. Per FDEP, this option does not require a permit. However, their review and approval to the dewatering and re-infiltration work plan is expected.
- Re-injection. The use of temporary well points to re-inject produced groundwater may be an option for managing recovered groundwater. Contractor shall coordinate with AF and FDEP to ensure regulatory compliance. Per FDEP, the use of temporary well points would trigger an injection well permit. For this type of activity, these temporary well points would be considered “connector wells” under Rule 62-528.600
- Alternative on-site (next to the point of generation, within the MILCON-rebuild Zone, and/or within an approved on-base waste accumulation area and/or treatment area) disposal options may be approved for use. For example: getting an National Pollutant Discharge Elimination System (NPDES) permit from FDEP to discharge large quantities of recovered groundwater

to a stormwater drain. Contractor shall coordinate with the AF and FDEP to ensure regulatory compliance.

Soil

- Recovered soil from demolition and construction activities that is not returned to the point of generation will need to be containerized and characterized in an area preferably located in the Zone of construction or in an approved area awaiting final disposition.

Construction Work Plans

- Construction contractors shall develop and obtain approval of work plans detailing means and methods to ensure proper management of waste soil and water, ensuring contamination is not spread during construction, dewatering, and containerizing activities.

- Construction contractor activities will be required to adhere to all Air Force, Federal and State of Florida regulations and standard operating procedures pertaining to these concerns.

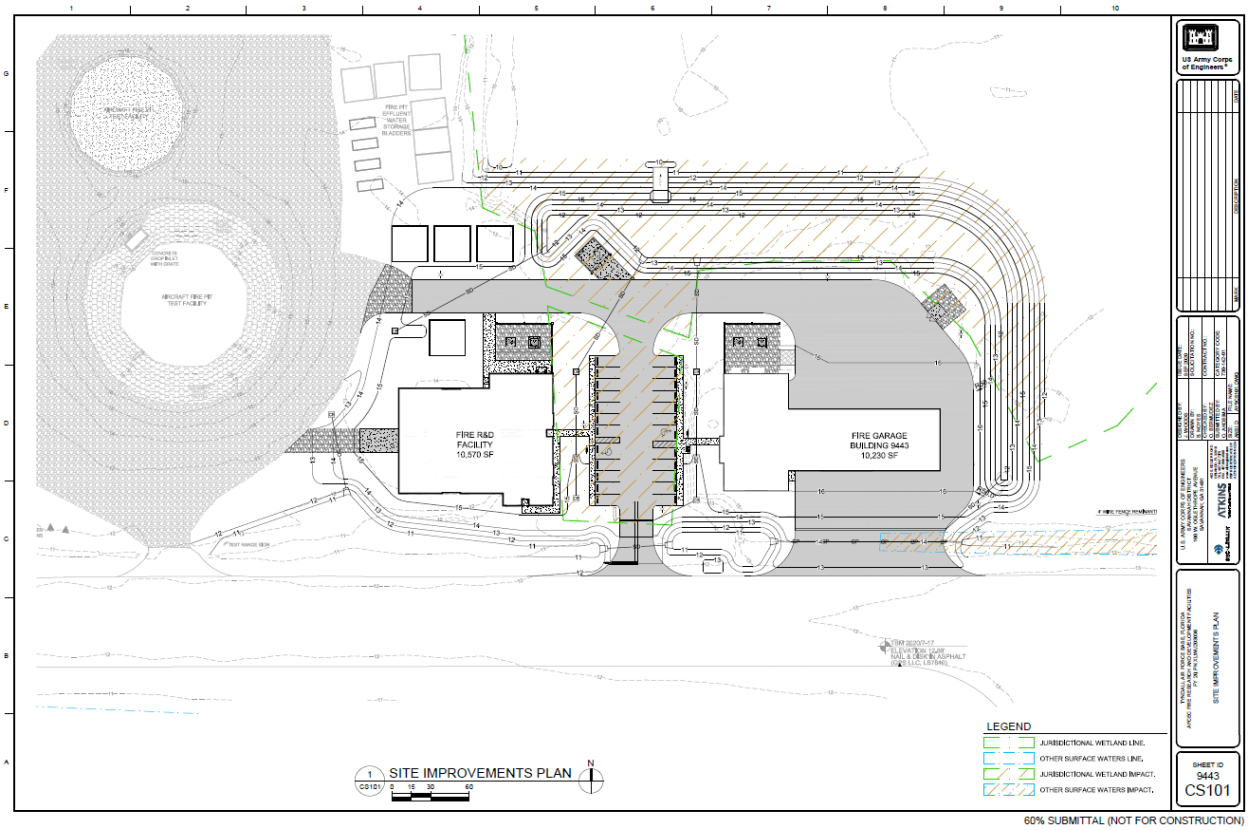
AFFF-Related Disposal Determination

AFFF-Related Media Type	Non Detect		Detected Below EPA LHA (liquid) or approved RSL (soil)		Detected Above EPA LHA or state promulgated standard (liquid)		Detected Above EPA RSL (soil)		Eligible for disposal as solid waste in off-base landfill	
	Pref A	Alt B	Pref A	Alt B	Pref A	Alt B	Pref A	Alt B	Pref A	Alt B
Liquid	1, 2, 4	4	1, 2	3, 4, 5	3	5, 6				
Soil	1, 2, 7	4	1, 2	4, 5, 6, 7			5	6, 7		
Spent treatment media (non-residential)			4	5, 6	5	6				
Other solids (e.g., PPE, rags, brooms, construction debris)									4	
Sludge (from on-site operations managing AFFF)	1, 2, 4	4	1, 2	4, 5	1,2	3, 4, 5, 6	1, 2, 4	5, 6		

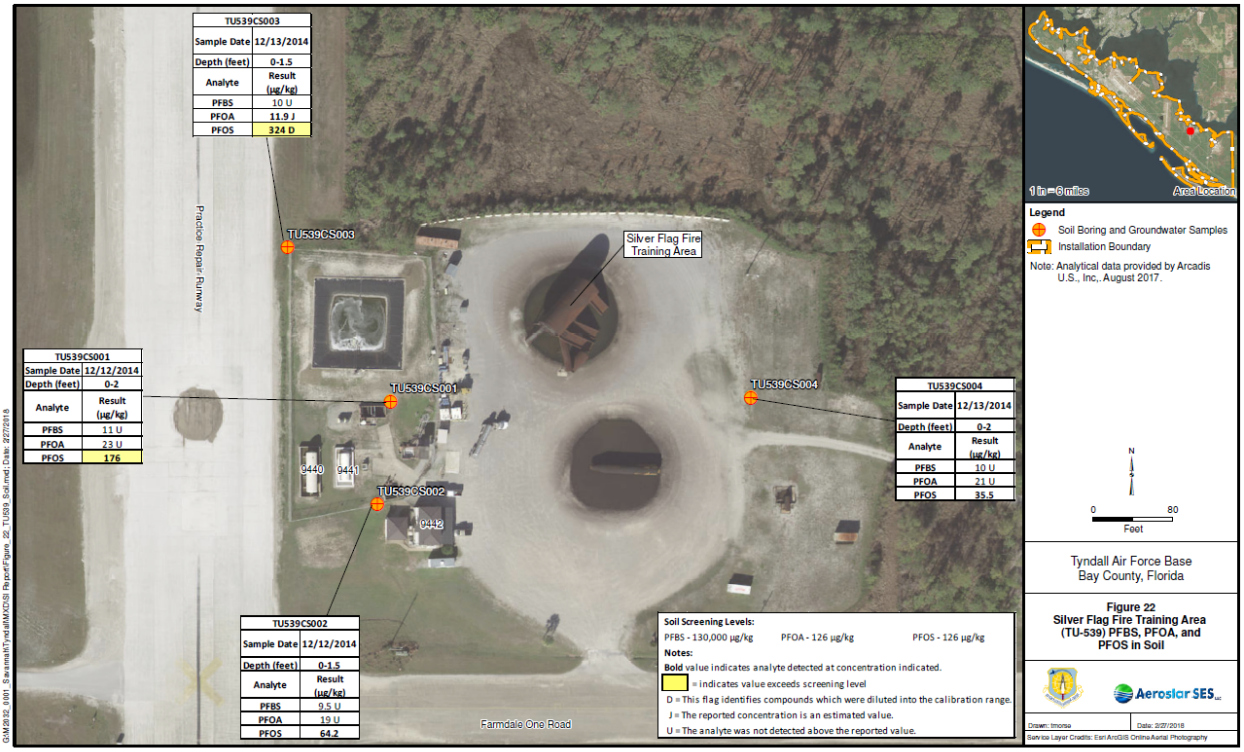
1 – Return small quantities of solid and liquid IDW below the RSL or LHA, respectively, to source location at point of generation
2 – Return large quantities of solid and liquid IDW below the RSL or LHA, respectively, to source location at point of generation
3 – Treatment (liquid waste streams only). AFFF-contaminated waste liquid must be treated on-site prior to discharge. Effluent must achieve reduction to less than or equal to LHA and/or applicable state or local promulgated

standards
4 – RCRA Subtitle D landfill
5 – RCRA Subtitle C landfill
6 – Other available treatment technology
7– Tyndall Borrow Source, when available

AFCEC Silver Flag Fire RDT&E Site Improvement Plan



TU539P-Sub Soil Sampling Results



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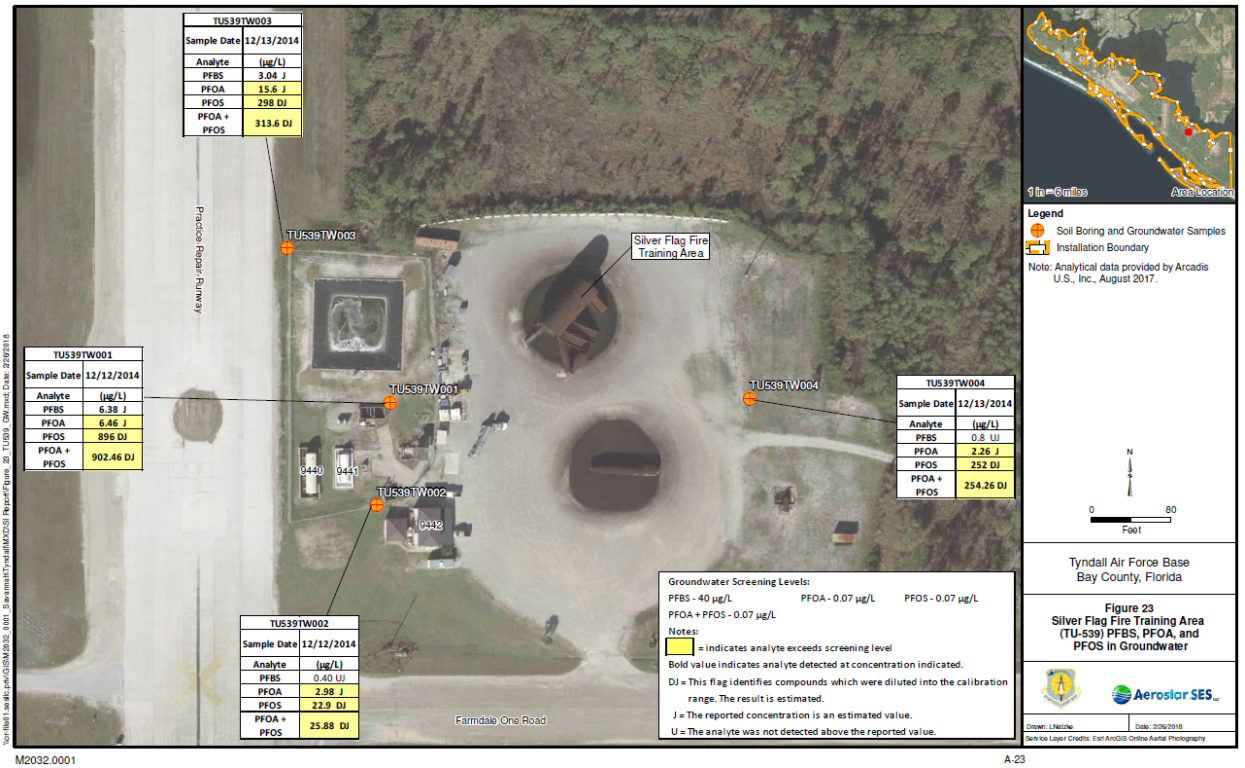
TU539P-Sub Groundwater Sampling Results



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APPENDIX C AIR CONFORMITY APPLICABILITY MODEL RECORD OF AIR ANALYSIS AND DETAIL REPORT

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: TYNDALL AFB
State: Florida
County(s): Bay
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Fire Research and Development Facilities at Tyndall AFB, FL

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2023

e. Action Description:

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael and conduct fire research, testing, and training in these facilities consistent with previous operations. The four R&D buildings that are being considered as part of the Proposed Action being replaced include Building 9718, fire laboratories; Building 9708, fire R&D personnel administrative and office space; Building 9443, R&D fire garage; and Building 9500E, small-scale indoor fire lab/hanger. Site work, utility lines and interconnections, pavements, stormwater management, and safety and security features would be included with the new facilities. Construction is tentatively scheduled to begin in fall 2023. No demolition is planned analyzed under this Proposed Action; all damaged facilities have already been demolished under the scope of the 2020 Rebuild EA. The demolition of Buildings 9718, 9708, and 9443 was analyzed under the scope of the 2020 Rebuild EA; Buildings 9718 and 9443 have already been demolished. Building 9500E is currently not planned for demolition.

f. Point of Contact:

Name: Brad Boykin
Title: CTR
Organization: Leidos
Email: boykinb@leidos.com
Phone Number: 979-575-3552

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.155	250	
NOx	5.407	250	
CO	6.525	250	
SOx	0.014	250	
PM 10	23.633	250	
PM 2.5	0.233	250	
Pb	0.000	25	No
NH3	0.004	250	
CO2e	1397.6		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	
NOx	0.000	250	
CO	0.000	250	
SOx	0.000	250	
PM 10	0.000	250	
PM 2.5	0.000	250	
Pb	0.000	25	No
NH3	0.000	250	
CO2e	0.0		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs.No further air assessment is needed.

_____ _____

Brad Boykin, CTR DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: TYNDALL AFB
State: Florida
County(s): Bay
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Fire Research and Development Facilities at Tyndall AFB, FL

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2023

- Action Purpose and Need:

The purpose of the Proposed Action is to replace fire R&D facilities that were damaged beyond repair during Hurricane Michael in 2018.

The Proposed Action is needed because fire R&D facilities are used for training and are mission essential. These facilities include space for the development and testing of firefighting equipment, personal protective equipment, and extinguishing techniques and procedures. The research and development expand new field technologies and prototypes. Without new facilities that meet applicable size, safety, and mission requirements, AFCEC cannot effectively conduct fire training activities. In addition, there would be a substantial reduction in fire R&D capacity without office and vehicle storage availability. Overall, lack of dedicated fire R&D facilities would negatively impact training and certification for firefighters across the Air Force and Department of Defense as well as other emergency responders, and there would potentially be a loss of valuable research.

- Action Description:

The Proposed Action is to construct replacement facilities for four fire R&D buildings that were damaged beyond repair during Hurricane Michael and conduct fire research, testing, and training in these facilities consistent with previous operations. The four R&D buildings that are being considered as part of the Proposed Action being replaced include Building 9718, fire laboratories; Building 9708, fire R&D personnel administrative and office space; Building 9443, R&D fire garage; and Building 9500E, small-scale indoor fire lab/hanger. Site work, utility lines and interconnections, pavements, stormwater management, and safety and security features would be included with the new facilities. Construction is tentatively scheduled to begin in fall 2023. No demolition is planned analyzed under this Proposed Action; all damaged facilities have already been demolished under the scope of the 2020 Rebuild EA. The demolition of Buildings 9718, 9708, and 9443 was analyzed under the scope of the 2020 Rebuild EA; Buildings 9718 and 9443 have already been demolished. Building 9500E is currently not planned for demolition.

- Point of Contact

Name: Brad Boykin
Title: CTR
Organization: Leidos
Email: boykinb@leidos.com
Phone Number: 979-575-3552

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Silver Flag Location

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Bay
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Silver Flag Location

- Activity Description:
Fire R&D Facility - 10,570 sq ft
Fire Garage Building - 10,230
Parking, Pavement - 50,530
Associated Infrastructure - 2,830
Grading - 196,020

- Activity Start Date
Start Month: 1
Start Month: 2023

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2023

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	1.155148
SO_x	0.014184
NO_x	5.406979
CO	6.525187
PM 10	23.632979

Pollutant	Total Emissions (TONs)
PM 2.5	0.232837
Pb	0.000000
NH_3	0.004281
CO_2e	1397.6

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 196020
Amount of Material to be Hauled On-Site (yd^3): 196
Amount of Material to be Hauled Off-Site (yd^3): 196

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.240	000.002	000.137	004.148	000.003	000.003		000.025	00334.045
LDGT	000.270	000.003	000.236	004.715	000.005	000.004		000.026	00429.693
HDGV	001.053	000.006	000.993	016.203	000.025	000.022		000.052	00933.502
LDDV	000.061	000.001	000.097	003.986	000.003	000.002		000.008	00347.372
LDDT	000.113	000.001	000.227	003.202	000.004	000.003		000.008	00390.523
HDDV	000.135	000.004	002.683	001.759	000.062	000.057		000.033	01306.331
MC	003.047	000.003	000.571	013.043	000.024	000.021		000.051	00386.862

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Building Construction Phase

2.2.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 23630
Height of Building (ft): 30
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips
Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.2.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Generator Sets Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0320	0.0006	0.2612	0.2683	0.0103	0.0103	0.0028	61.065
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879
Welders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0242	0.0003	0.1487	0.1761	0.0067	0.0067	0.0021	25.657

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.240	000.002	000.137	004.148	000.003	000.003		000.025	00334.045
LDGT	000.270	000.003	000.236	004.715	000.005	000.004		000.026	00429.693
HDGV	001.053	000.006	000.993	016.203	000.025	000.022		000.052	00933.502
LDDV	000.061	000.001	000.097	003.986	000.003	000.002		000.008	00347.372
LDDT	000.113	000.001	000.227	003.202	000.004	000.003		000.008	00390.523
HDDV	000.135	000.004	002.683	001.759	000.062	000.057		000.033	01306.331
MC	003.047	000.003	000.571	013.043	000.024	000.021		000.051	00386.862

2.2.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Architectural Coatings Phase

2.3.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 6

Number of Days: 0

2.3.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 20800
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.240	000.002	000.137	004.148	000.003	000.003		000.025	00334.045
LDGT	000.270	000.003	000.236	004.715	000.005	000.004		000.026	00429.693
HDGV	001.053	000.006	000.993	016.203	000.025	000.022		000.052	00933.502
LDDV	000.061	000.001	000.097	003.986	000.003	000.002		000.008	00347.372
LDDT	000.113	000.001	000.227	003.202	000.004	000.003		000.008	00390.523
HDDV	000.135	000.004	002.683	001.759	000.062	000.057		000.033	01306.331
MC	003.047	000.003	000.571	013.043	000.024	000.021		000.051	00386.862

2.3.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.4 Paving Phase

2.4.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2023

- Phase Duration
Number of Month: 12
Number of Days: 0

2.4.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 50530

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.4.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.240	000.002	000.137	004.148	000.003	000.003		000.025	00334.045
LDGT	000.270	000.003	000.236	004.715	000.005	000.004		000.026	00429.693
HDGV	001.053	000.006	000.993	016.203	000.025	000.022		000.052	00933.502
LDDV	000.061	000.001	000.097	003.986	000.003	000.002		000.008	00347.372
LDDT	000.113	000.001	000.227	003.202	000.004	000.003		000.008	00390.523
HDDV	000.135	000.004	002.683	001.759	000.062	000.057		000.033	01306.331
MC	003.047	000.003	000.571	013.043	000.024	000.021		000.051	00386.862

2.4.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

APPENDIX D COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

FLORIDA COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 161 *Beach and Shore Preservation*	Authorizes the Bureau of Beaches and Coastal Systems within FDEP jurisdiction to regulate construction on or seaward of the state's beaches.	The Proposed Action would not adversely affect beach and shore management, specifically as it pertains to the Coastal Construction Permit Program, the Coastal Construction Control Line (CCCL) Program, and the Coastal Zone Protection Program. The Proposed Action would occur within Tyndall AFB and would not occur seaward of the CCCL.
Chapter 163, Part II *Growth Policy; County and Municipal Planning; Land Development Regulation*	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.	The Proposed Action would occur within Tyndall AFB and, therefore, would not affect municipal or county government comprehensive plans.
Chapter 186 *State and Regional Planning*	Details state level planning requirements. Requires the development of special statewide plans governing water use, land development, and transportation.	As part of the NEPA process, the Proposed Action is being coordinated with federal, state, and local governments and agencies, including the FDEP State Clearinghouse, for compatibility with state and regional planning.
Chapter 252 *Emergency Management*	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and man-made disasters.	The Proposed Action would not affect the ability of the state to respond to or recover from natural or manmade disasters.
Chapter 253 *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.	The Proposed Action would occur entirely within Tyndall AFB. No state lands would be disturbed during the construction, renovations, infrastructure construction, or demolitions and, therefore, would not be affected.
Chapter 258 *State Parks and Preserves*	Addresses administration and management of state parks and preserves.	The Proposed Action would not directly impact state parks, recreational areas or preserves. Secondary or indirect impacts to environmental or social resources related to these facilities are not anticipated. Opportunity for recreation on state lands would not be affected.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 259 *Land Acquisition for Conservation or Recreation*	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.	The Proposed Action would occur within Tyndall AFB and would not affect the acquisition of environmentally endangered and outdoor recreation lands.
Chapter 260 *Recreational Trails System*	Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system.	The Proposed Action would occur within Tyndall AFB and would not have an impact on the acquisition of land to create a recreational trails system.
Chapter 267 *Historical Resources*	Addresses management and preservation of the state's archaeological and historical resources.	The Proposed Action would not adversely affect historical or cultural resources of the State of Florida. The Air Force received a letter from the Florida State Historic Preservation Office stating that the proposed undertaking would have no effect on historic properties pursuant to Section 106 of the National Historic Preservation Act. In the event of an unanticipated discovery (including human remains) during ground-disturbing activities, the standard operating procedures outlined in the Tyndall AFB Integrated Cultural Resources Management Plan would be followed.
Chapter 288 *Commercial Development and Capital Improvements*	Provides the framework for promoting and developing the general business, trade, and tourism components of the state economy.	The Proposed Action would occur on an active military installation with limited access to the public and limited or no implications for effects on general business, trade, and tourism components of the state economy.
Chapter 334 *Transportation Administration*	Addresses the state's policy concerning transportation administration.	The Proposed Action would not have an impact on the state's transportation administration policies.
Chapter 339 *Transportation Finance and Planning*	Addresses the finance and planning needs of the state's transportation system.	The Proposed Action would not affect the finance and planning needs of the state's transportation system.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 373 *Water Resources*	Addresses the state's policy concerning water resources.	There would be no direct impacts on floodplains as no 100-year or 500-year floodplains occur within the project boundaries. No indirect impacts on floodplains are anticipated because off-site impacts would be minimized through the design of drainage systems to properly convey and store stormwater flows. The groundwater has known PFAS contamination; dewatering, if required, would be handled according to guidelines established for TU539P-Sub. Thus, impacts to groundwater would be minor. Up to 4.2 acres would be cleared and graded for construction and stormwater drainage, with approximately 74,160 square feet of impervious surfaces. Total site disturbance exceeds one acre, so a National Pollutant Discharge Elimination System permit would be required. To address the potential for excess sedimentation and other runoff impacts, the proponent would obtain all necessary permits and implement permit requirements and best management practices. Hazardous materials and waste and contaminated media would be managed in accordance with applicable environmental compliance regulations and Tyndall AFB environmental management plans and guidelines. Operations would follow Tyndall AFB spill prevention and containment measures. The Proposed Action may impact up to 1.23 acres of wetlands and up to 0.05 acre of other surface waters. Design measures would be implemented to avoid/minimize impacts to wetlands and other surface waters. The Air Force, U.S. Army Corps of Engineers, and FDEP/NWFWMD will identify the appropriate mitigation efforts to offset these impacts. With implementation of permit requirements and mitigations for the affected wetlands, the Proposed Action would not result in significant impacts on groundwater, floodplains, surface waters, or wetlands.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 375 *Outdoor Recreation and Conservation Lands*	Develops comprehensive multipurpose outdoor recreation plans to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.	The Proposed Action would not impact the state's development or evaluation of multipurpose outdoor recreation plans.
Chapter 376 *Pollutant Discharge Prevention and Removal*	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.	The Proposed Action would follow the procedures in the Tyndall AFB Hazardous Material Emergency Planning and Response Plan and the Tyndall AFB Spill Prevention, Control, and Countermeasure (SPCC) Plan that establishes procedures, methods, equipment, and other criteria to both prevent and respond to discharges of oily and hazardous substances. Project-specific best management practices would be implemented for the construction and operation of the Proposed Action in accordance with stormwater discharge permit conditions. The Proposed Action would not alter the types of hazardous and other regulated materials used at Tyndall AFB. Site construction would disturb soils that are potentially contaminated with PFAS (see Section 3.3, Earth Resources, and Section 3.6, Hazardous Materials and Wastes). All soil-disturbing and construction activities near or within TU539P-Sub would adhere to established guidelines per the Air Force's memorandum for record with the FDEP to ensure that soil from Tyndall AFB does not exceed PFOS or PFOA standards (see Section 3.6.3.2 of the EA). The Proposed Action would not involve the transfer of pollutants between vessels; between onshore facilities and vessels; between offshore facilities and vessels; or between terminal facilities within jurisdiction of the state and state waters. No significant impacts are anticipated from hazardous materials and wastes associated with the Proposed Action.
Chapter 377 *Energy Resources*	Addresses regulation, planning, and development of energy resources of the state.	Implementation of the Proposed Action would not cause unsupportable demands on available natural resources or energy supplies.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 379 *Fish and Wildlife Conservation*	Addresses management and protection of fish and wildlife in the state.	Up to 4.2 acres would be cleared and graded for construction and stormwater drainage, mostly low quality wildlife habitat, as the majority of the project site has been disturbed by previous construction or post-hurricane timber harvest/ salvage operations. The loss of up to 1.23 acres of disturbed hydric pine flatwoods would represent a small amount of the total wet flatwood habitat on the installation (4,407 acres). Nesting, foraging, and cover areas may be lost, but animals would likely relocate to adjacent similar habitat, resulting in negligible effects on overall species populations on the installation. Adjacent habitats may be affected by runoff from new impervious surfaces. However, site designs would include stormwater drainage and management measures. Thus, runoff from the Proposed Action would not affect surrounding vegetation or habitat. There is potential for wildlife mortality during construction and operational activities, most likely involving smaller, slow-moving species. Disturbances from noise may disrupt wildlife but would be intermittent and would not have long-term effects on wildlife. The Air Force is conducting informal Endangered Species Act section 7 consultation with the USFWS regarding potential impacts to federally protected species. No critical habitat is present at the site and no listed species have been documented, but the following have the potential to occur: eastern black rail, monarch butterfly, Godfrey's butterwort, and telephus spurge. If present, individual plants may be injured or killed by equipment, and animals may be directly impacted by equipment or disturbed by noise. However, any black rails, monarch butterflies, migratory birds, or eagles that may be in the area would be expected to move to adjacent habitat to avoid impacts. The Proposed Action would not reduce the distribution or viability of protected species or critical habitats. The Proposed Action would not result in significant impacts to any habitats, fish, wildlife, or federally protected species.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 380 *Land and Water Management*	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.	The Proposed Action would be developed consistent with local land and water management plans. The Proposed Action is subject to local permit, stormwater, and environmental requirements and review. The Proposed Action will require coordination with and authorization from the U.S. Army Corps of Engineers and the FDEP/NWFWMD.
Chapter 381 *Public Health, General Provisions*	Establishes public policy concerning the state's public health system.	The Proposed Action does not involve the construction of an onsite sewage treatment and disposal system. Construction activities associated with the Proposed Action are governed by regulations established by the Air Force Occupational Safety and Health Program and the Occupational Safety and Health Administration. No appreciable change in the type, quantity, or disposal of solid wastes is expected. The Proposed Action would not impact public policy or management with regards to sanitation, communicable diseases, or public health.
Chapter 388 *Mosquito Control*	Addresses mosquito control efforts in the state.	The Proposed Action would not affect local mosquito control efforts or contribute to increased propagation of mosquitos.
Chapter 403 *Environmental Control*	Establishes public policy concerning environmental control in the state.	The construction and operations of the Proposed Action would include project-specific best management practices and pollution prevention measures. The Proposed Action is not expected to exceed applicable state water quality standards or have substantial and longer-term water quality impacts. Air pollutant emissions associated with construction of the Proposed Action would not exceed Air Force significance thresholds or cause exceedances of air quality standards. No long-term changes in air emissions are expected. Construction wastes and operational wastes would be collected, transported, recycled, and disposed of in compliance with applicable state and local regulations. The Air Force would obtain and comply with all applicable permits as required by law.

Florida Statute	Legal Scope	Consistency Evaluation
Chapter 553 *Building Construction Standards*	Provides a mechanism for the uniform adoption, updating, amendment, interpretation, and enforcement of a single, unified state building code, to be called the Florida Building Code. Obtain a permit from the appropriate enforcing agency.	The Proposed Action would not affect the Building Construction Standards of the State of Florida. The Air Force would obtain and comply with all applicable permits as required by law.
Chapter 582 *Soil and Water Conservation*	Provides for the control and prevention of soil erosion.	A stormwater pollution prevention plan would be developed and followed, and best management practices addressing erosion and sediment controls would be implemented to minimize impact to soils and water quality. The Proposed Action would be consistent with the current characteristic features of the area and landscape and would not result in any changes to land use. The Proposed Action would not affect soils or farmland within a Soil and Water Conservation District and would not convert prime farmland.
Chapter 597 *Aquaculture*	Establishes public policy concerning the cultivation of aquatic organisms.	The Proposed Action has no activities related to the cultivation of marine species in the study area. The Proposed Action activities would not affect aquaculture.

Sources: Florida Statutes, as identified in table.
Key: AFB = Air Force Base; CCCL = Coastal Construction Control Line; FDEP = Florida Department of Environmental Protection; NEPA = National Environmental Policy Act; NWFWMD = Northwest Florida Water Management District; PFOA = perfluorooctanoic acid; PFOS = perfluorooctane sulfonate.

APPENDIX E U.S. FISH AND WILDLIFE SERVICE INFORMATION FOR PLANNING AND CONSULTATION (IPAC)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
Phone: (772) 562-3909 Fax: (772) 562-4288
Email Address: fw4flesregs@fws.gov
https://www.fws.gov/office/florida-ecological-services

In Reply Refer To: February 01, 2023
Project Code: 2023-0005323
Project Name: Tyndall AFB Fire RD Facilities EA

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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

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

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Marine Mammals
- Wetlands

Official Species List

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

This species list is provided by:

Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
(772) 562-3909

Project Summary

Project Code: 2023-0005323
Project Name: Tyndall AFB Fire RD Facilities EA
Project Type: Military Development
Project Description: The 325th Civil Engineer Squadron (325 CES) is preparing this Environmental Assessment (EA) to consider the potential consequences to the human and natural environment associated with the reconstruction of Air Force Civil Engineer Center (AFCEC) fire research and development (R&D) facilities at Tyndall Air Force Base (AFB), Florida.

The Proposed Action is to construct two replacement facilities to consolidate fire R&D mission activities at the Silver Flag location: a fire R&D facility and a fire garage building. The fire facility would provide space for the indoor laboratories and the garage would provide vehicle storage capacity. The proposed location for the fire garage building is the site of the former fire garage—Building 9443—that was destroyed. The new fire R&D facility would be immediately west of the garage. This site is adjacent to two aircraft fire pit test facilities and the associated infrastructure. As a result, the fire R&D facilities would be compatible with the existing adjacent land uses.
The site would be cleared and graded for construction and stormwater drainage. Construction would require soil excavation up to 48 inches below the graded surface, fill with certified clean materials, and compaction per site design; the foundation/asphalt would be poured on top. The proposed site would be built with approximately 50,530 square feet of pavement to include twenty parking spaces for facility staff, ten spaces for government vehicles, and sidewalks. A mechanical yard would be built with concrete pads for an air conditioning condenser and transformer. Site construction would also include fire pit effluent water storage, cargo containers, trash and recycling facilities, fencing, and lighting.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@30.0207446,-85.49604725361806,14z

Counties: Bay County, Florida

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

Birds

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened

Reptiles

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened
Eastern Indigo Snake *Drymarchon couperi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/646	Threatened

Fishes

NAME	STATUS
Gulf Sturgeon *Acipenser oxyrinchus (=oxyrhynchus) desotoi*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/651

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Florida Skullcap *Scutellaria floridana*	Threatened

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2240

Godfrey's Butterwort *Pinguicula ionantha*	Threatened

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6805

Harper's Beauty *Harperocallis flava*	Endangered

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3735

Telephus Spurge *Euphorbia telephioides*	Threatened

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5499

White Birds-in-a-nest *Macbridea alba*	Threatened

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6291

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

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

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

NAME	BREEDING SEASON
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Brown-headed Nuthatch *Sitta pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 15
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Swallow-tailed Kite *Elanoides forficatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wilson's Plover *Charadrius wilsonia* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Aug 20

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

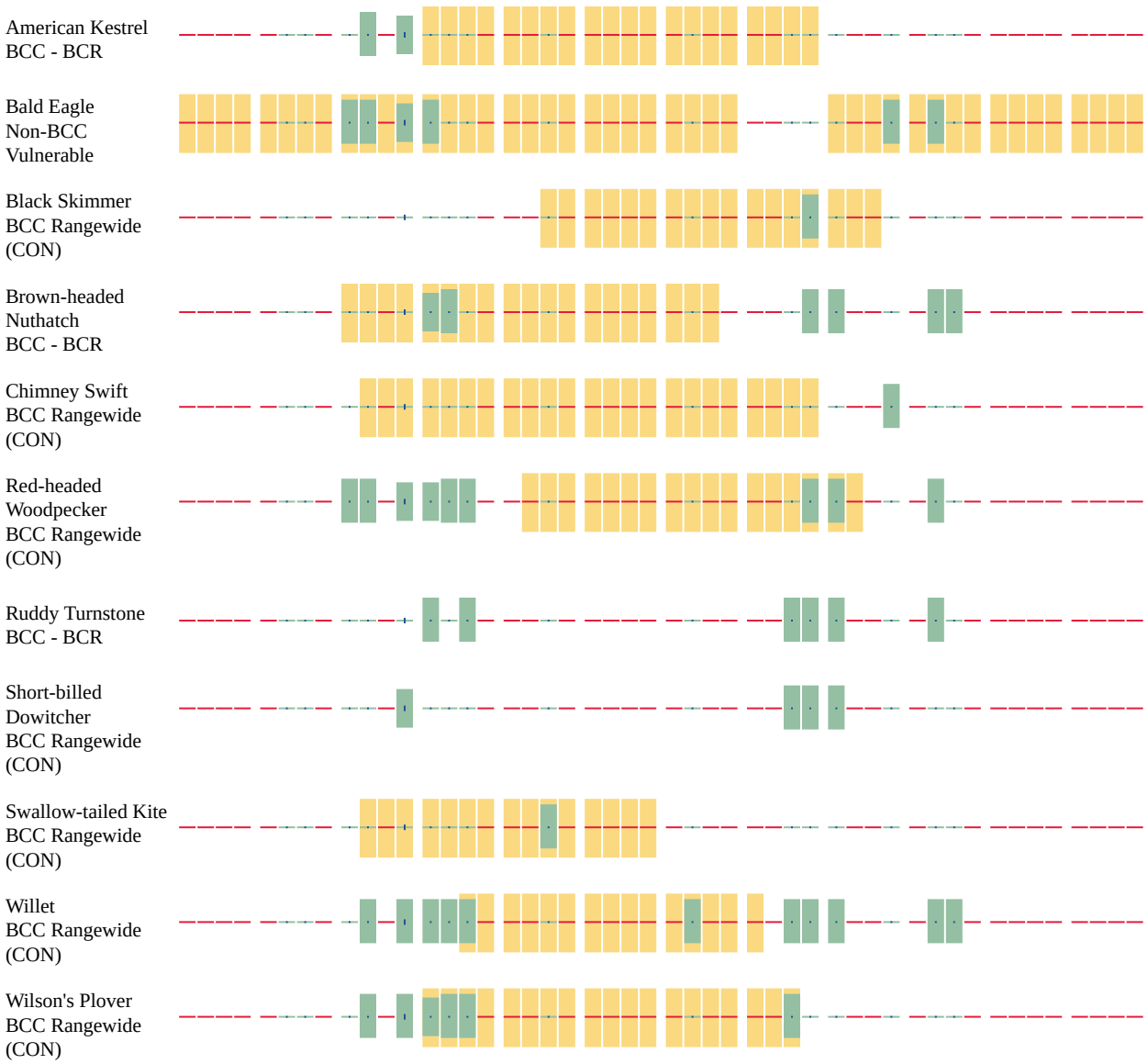
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

▪ probability of presence ▪ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Marine Mammals

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

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1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*

Species profile: https://ecos.fws.gov/ecp/species/4469

Wetlands

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

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

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

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

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Lead Agency Contact Information

Lead Agency: Air Force