Draft

Environmental Assessment

Addressing Installation Development at MacDill Air Force Base

Tampa, Florida

US Army Corps of Engineers®

August

2024

Privacy Advisory

This Draft Installation Development Environmental Assessment (IDEA) is provided for public comment in accordance with the National Environmental Policy Act, the President's Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and 32 CFR 989, *Environmental Impact Analysis Process* (EIAP).

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

Public commenting allows DAF to make better, informed decisions. Letters or other written or oral comments provided may be published in the IDEA. As required by law, comments provided will be addressed in the IDEA and made available to the public. Providing personal information is voluntary. Private addresses will be compiled to develop a mailing list for those requesting copies of the IDEA. However, only the names of the individuals making comments and specific comments will be disclosed in the IDEA. Personal information, home addresses, phone numbers, and email addresses will not be published in the Final IDEA.

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ACM	asbestos-containing material
AFB	Air Force Base
AFFF	aqueous film-forming foam
AFI	Air Force Instruction
AFMAN	Air Force Manual
AMC	Air Mobility Command
AMOP	Asbestos Management and Operations Plan
APE	area of potential effects
ARW	Air Refueling Wing
AST	aboveground storage tank
AT/FP	Antiterrorism Force Protection
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
BSE	Building Services Equipment
C&D	construction and demolition
CAA	Clean Air Act
CEIE	Civil, Environmental, and Infrastructure Engineering
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Civil Engineer Squadron
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	equivalent emissions of CO_2
CUP	Centralized Utility Plant
CWA	Clean Water Act
CY	calendar year
CZ	clear zone
CZMA	Coastal Zone Management Act
DAF	Department of the Air Force
DAFI	Department of the Air Force Instruction
DAFMAN	Department of the Air Force Manual
dB	decibel
dBA	“A”-weighted decibel
DESR	Defense Explosives Safety Regulation
DNL	day-night average sound level
DoD	Department of Defense
DoDI	Department of Defense Instruction
DUC	Deployed Unit Complex
EIAP	Environmental Impact Analysis Process
EISA	Energy Independence and Security Act
EJScreen	Environmental Justice Screening Tool
EO	Executive Order
ERCIP	Energy Resilience and Conservation Investment Program
ERP	Environmental Restoration Program
ESA	Endangered Species Act
ESCP	Erosion and Sedimentation Control Plan
ESQD	explosive safety quantity-distance
FAC	Florida Administrative Code
FAS	Floridan Aquifer System

FC	federal candidate
FDEP	Florida Department of Environmental Protection
FE	federally endangered
FEMA	Federal Emergency Management Agency
FGUA	Florida Government Utility Authority
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
FT	federally threatened
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
GHG	greenhouse gas
HVAC	heating, ventilation, and air conditioning
HWMP	Hazardous Waste Management Plan
Hz	hertz
ICRMP	Integrated Cultural Resources Management Plan
IDEA	Installation Development Environmental Assessment
IDP	Installation Development Plan
IRP	Installation Restoration Program
ISWMP	Integrated Solid Waste Management Plan
JCSE	Joint Communication Support Element
kV	kilovolt
LBP	lead-based paint
LRS	Logistics Readiness Squadron
LUC	land use control
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MISO	Military Information Support Operations
MMPA	Marine Mammal Protection Act
MMRP	Military Munitions Response Program
MOB 6	Main Operating Base #6
MSGP	Muti-Sector General Permit
MSL	mean sea level
MSW	municipal solid waste
MW	megawatt
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
N_2O	nitrous oxide
NOA	Notice of Availability
NO_x	nitrogen oxides
NRHP	National Register of Historic Places
O_3	ozone
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OWS	oil/water separator
PCB	polychlorinated biphenyls
PCI	Pavement Condition Index
pCi/L	picocuries per liter
PE	proposed endangered
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid
PFOA	perfluorooctanoic acid

PFOS	perfluorooctane sulfonate
$PM_{2.5}$	particulate matter measured less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter measures less than or equal to 10 microns in diameter
POL	petroleum, oils, and lubricants
PPE	personal protective equipment
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROI	region of influence
RSL	regional screening level
S/A	similarity of appearance
SDI	Sustainability Development Indicator
SF	square feet
SHPO	State Historic Preservation Officer
SI	Site Inspection
SO_2	sulfur dioxide
SO_x	sulfur oxides
SOP	standard operating procedure
SPCC	Spill Prevention, Control, and Countermeasure
ST	state threatened
SWPPP	Stormwater Pollution Prevention Plan
TECO	Tampa Electric Company
tpy	tons per year
UFC	Unified Facilities Criteria
UR	under review
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USCENTCOM	United States Central Command
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USSOCOM	United States Special Operations Command
UST	underground storage tank
VOC	volatile organic compound
WOTUS	waters of the United States
WWTP	wastewater treatment plant

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COVER SHEET

Draft Environmental Assessment Addressing Installation Development at MacDill Air Force Base, Florida

Responsible Agency: Department of the Air Force (DAF).

Affected Location: MacDill Air Force Base (AFB).

Report Designation: Draft Installation Development Environmental Assessment (IDEA).

Abstract: The 6th Air Refueling Wing (ARW) at MacDill AFB, Florida, and the Air Mobility Command have identified priorities for installation development projects and proposes to implement them over the next 5 years (Fiscal Years 2025–2030). The intent of the ongoing process of installation development at MacDill AFB is to provide infrastructure improvements necessary to support the mission of the 6 ARW and mission partners. This IDEA addresses the proposed nine facility construction, infrastructure construction and repair, and demolition projects that were identified as priorities for installation development. The IDEA analyzes the potential for environmental impacts associated with the Proposed Action and alternatives, including the No Action Alternative, and will assist in determining whether a Finding of No Significant Impact can be prepared, or an Environmental Impact Statement is required. Resources addressed in the IDEA include noise, land use, air quality, biological resources, water resources, infrastructure and transportation, geological resources, cultural resources, hazardous materials, recreation and visual, safety, and environmental justice.

Written comments and inquiries regarding this document should be directed to MacDill AFB 6 ARW Public Affairs, RE: MacDill AFB IDEA, 8280 Hangar Loop Drive, Suite 14, MacDill AFB, Florida 33621-5207; via email at 6.arw.pa@us.af.mil, including MacDill AFB IDEA in the subject line; or via phone at (812) 263-9331.

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1. Purpose of and Need for the Proposed Action

1.1 Introduction

The 6th Air Refueling Wing (ARW) at MacDill Air Force Base (AFB), Florida, and the Air Mobility Command (AMC) have identified priorities for installation development projects and proposes to implement them over the next 5 years (Fiscal Years [FY] 2025–2030). This Installation Development Environmental Assessment (IDEA) was prepared to evaluate the potential environmental impacts of these proposed projects in compliance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code [USC] Section 4331 et seq.), as amended; the regulations of the President's Council on Environmental Quality (CEQ) that implement NEPA procedures (40 Code of Federal Regulations [CFR] 1500-1508), as amended; the Department of the Air Force (DAF) Environmental Impact Analysis Process (EIAP) Regulations at 32 CFR 989, and Air Force Instruction (AFI) 32-1015, *Integrated Installation Planning*.

The intent of the ongoing process of installation development at MacDill AFB is to provide infrastructure improvements necessary to support the mission of the 6 ARW and mission partners. The nine projects considered in this IDEA were identified as priorities for installation development in the 2019 MacDill AFB Installation Development Plan (IDP; MacDill AFB 2019a). The IDP identifies requirements for the improvement of the physical infrastructure and functionality of MacDill AFB, including current and future mission, facilities, and infrastructure requirements; development constraints and opportunities; and land use relationships.

MacDill AFB comprises 5,695 acres at the southern tip of the Interbay Peninsula, in Hillsborough County, Florida within the City of Tampa (see **Figure 1-1**). MacDill AFB is home to the 6 ARW, which is composed of the 6th Operations Group, the 6th Maintenance Group, the 6th Mission Support Group, and the 6th Medical Group. In addition to the 6 ARW, MacDill AFB hosts mission partners, including United States Central Command (USCENTCOM) and United States Special Operations Command (USSOCOM). The presence of these two unified commands and other mission partners creates a unique multi-service community at MacDill AFB, with all branches of the armed forces represented.

The intent of the 6 ARW and AMC is to streamline NEPA compliance and facilitate the installation development process by evaluating the potential impacts of implementing installation development projects in one integrated document. These projects are listed in **Table 1-1.**

The information presented in this document will serve as the basis for deciding whether the Proposed Action would result in a significant impact to the human environment, requiring the preparation of an Environmental Impact Statement, or whether no significant impacts would occur, in which case a Finding of No Significant Impact (FONSI) would be appropriate. Because implementation of some of the projects would involve "construction" in floodplains and wetlands, per Executive Order (EO) 11988, *Floodplain Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and EO 11990, *Protection of Wetlands*, a Finding of No Practicable Alternative (FONPA) will be prepared in conjunction with the FONSI.

Figure 1-1. Location of MacDill AFB

1.2 Purpose of the Installation Development

The purpose of the Proposed Action is to provide infrastructure and functionality improvements necessary to support the missions of the 6 ARW and MacDill AFB mission partners.

The Installation (or Area/District) Development Plans provide a comprehensive planning framework to identify future priority requirements and goals for development to ensure successful installation operations, adequate support capacity, and continued ability of the installation to support its assigned mission sets. Ideal development principles for maximizing the Installation's long-term capabilities are identified in Strategic Vision Alignment. The Planning Constraints, together with the Installation Capacity Opportunities, identify areas suitable for future development. Those combined with Sustainability Development Indicators (SDIs) direct the scale of development and how and where that development should occur to best meet ongoing mission needs and the long-term (base) IDP vision, which is illustrated in the Future Development Planning section of the IDP. Plan implementation identifies short, mid-, and long-range projects, and correlates the project with the goals and objectives of the IDP. Planning activities must integrate the NEPA processes; to ensure that planning and decisions reflect environmental values; to identify alternatives considered, document which alternatives would be carried forward for full analysis and the rationale for those dismissed; to avoid delays later in the process, and to head off potential conflicts.

1.3 Need for the Installation Development

Installation development is needed to address deficiencies in function and capability of the facilities and infrastructure at MacDill AFB that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Left unchecked, these deficiencies degrade the ability of the installation to meet the DAF and Department of Defense (DoD) current and future mission requirements relative to the applicable regulatory requirements.

The provision and maintenance of up-to-date, adequately sized, and safe infrastructure is required to allow the 6 ARW and its mission partners to successfully complete their missions. Installation development projects must be developed in a manner that:

- Meets applicable DoD installation master planning criteria, consistent with Unified Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*; AFI 32-1015, *Integrated Installation Planning*; and Air Force Policy Directive 32-10, *Installations and Facilities*
- Meets all applicable DoD, federal, state, and local laws and regulations, such as but not limited to the Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Clean Water Act (CWA), Clean Air Act (CAA), Resource Conservation and Recovery Act (RCRA), and Migratory Bird Treaty Act (MBTA). More detailed information regarding resource-specific laws and regulations will be provided in the specific resource sections located in Chapter 3.
- Provides reliable utilities and an efficient transportation system to support MacDill AFB and meets current DAF requirements for functional space, consistent with Department of the Air Force Manual (DAFMAN) 32-1084, *Facility Requirements*

- Meets applicable DoD antiterrorism/force protection (AT/FP) criteria, consistent with UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*
- Reduces the consumption of fuel, energy, water, and other resources; maximizes the use of existing facilities; and reduces the footprint of unnecessary or redundant facilities and infrastructure in accordance with EO 13693, *Planning for Federal Sustainability in the Next Decade*; EO 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis;* and the Energy Policy Act of 2005
- Supports and enhances the morale and welfare of personnel assigned to the installation, their families, and civilian staff, consistent with Department of Defense Instruction (DoDI) 1015.10, *Military Morale, Welfare, and Recreation (MWR) Programs* and multiple AFIs and Manuals.

1.4 Installation Development Plan

In keeping with planning districts established in the 2017 MacDill AFB IDP, the 2019 MacDill AFB IDP uses the same planning districts to describe existing land use, capacities, and future development opportunities on MacDill AFB. District-based development opportunities, capacities, and alternative development scenarios are presented in the 2019 IDP for all planning districts. The MacDill AFB Planning Districts, along with the permitted uses and preliminary form-based planning standards, provide the foundation for future development at MacDill AFB and allow installation leadership to consider and compare potential sites that best meet the IDP vision, planning goals, and objectives.

1.5 Environmental Analysis Approach for the IDP

The DAF has identified nine projects within the IDP for environmental analysis that are related to the different categories of activities considered and geographic areas associated with the installation, and will assess the impacts of these projects that could occur over FYs 2025–2030. Analysis focuses on future development activities and priorities of the installation as established by the Wing Commander in conjunction with AMC and DAF mission planning. Any additional projects or future activities proposed on areas associated with the installation must be evaluated on their own merit under the DAF EIAP regulations to determine their environmental impacts and appropriate level of NEPA analysis.

1.6 Purpose of and Need for Individual Projects Included in the Proposed Action

Each of the proposed actions (or projects) included in the EA has a specific purpose and need. For purposes of this EA, the purpose and need for each of the projects considered for analysis is presented in **Table 1-1**.

Table 1-1. Purpose and Need for Installation Development Projects

Project Name and Number	Purpose of the Project	Need for the Project
Facility Construction Projects		
Joint Communication Support Element (JCSE) Joint Operations and Logistics Maintenance Facility (NVZR193704)	The purpose of this project is to provide two adjacent facilities that are properly configured and right-sized with updated communication services to meet the needs of the current JCSE mission.	This project is needed because the existing JCSE facilities were constructed in the 1970s and 80s and have deteriorated with age. Maintenance and repair are frequently needed to maintain the facilities, and the cost for maintenance per square foot is substantially higher than the MacDill AFB average. Additionally, the JCSE mission has grown continuously since its inception and facilities have been added and reconfigured to meet mission demands. Currently the main JCSE building, Building 861, is both the headquarters offices and the warehouse area. JCSE requires a new headquarters building to improve the operational efficiency and reduce facility maintenance requirements which often impact mission effectiveness. Additionally, separating the headquarters office space from the warehouse functions would eliminate the current situation of incompatible work areas.
Construct Bayshore Gate (NVZR190031)	The purpose of this project is to reconfigure Bayshore Gate to bring it into compliance with AT/FP requirements, reduce installation breaches, and alleviate excessive traffic queuing.	This project is needed because the current gate configuration blocks the line of sight for security forces defenders who man the entry gate, which delays their reaction time during gate breaches. Bayshore Gate has extremely poor vehicle queuing, which can cause lengthy vehicle backups up to a mile during peak morning hours. In addition, the current wedge barrier system is substandard when compared to grab net barriers that have been installed at Dale Mabry and MacDill Gates.

Project Name and Number	Purpose of the Project	Need for the Project
JCSE RUBB Facility Replacement (NVZR180048)	The purpose of this project is to provide a facility with a properly configured, modern warehouse and an office that would reduce maintenance costs and improve mission training and efficiency.	This project is needed because the existing RUBB facility requires recurring maintenance and is not well configured for current mission needs.
Infrastructure Construction and Repair Projects		
Widen Zemke Avenue (NVZR180060)	The purpose of this project is to increase traffic flow east on the installation toward Bayshore Boulevard to allow vehicles to more easily exit the installation through Bayshore Gate.	This project is needed because this section of Zemke Avenue is congested because Southshore Boulevard and Bayshore Boulevard are the only roads that connect the more heavily developed administrative and southern portions of MacDill AFB to the installation exit points. Widening of Zemke Avenue is required to reduce congestion that is common in the afternoon with the increased traffic during rush hour.
Apron Flood Lighting (NVZR173710)	The purpose of this project is to address airfield and aircraft safety and comply with applicable safety policies by providing appropriate lighting on the airfield.	This project is needed because the existing lighting pattern at the airfield is not uniform, is inadequate on the apron, and is non-compliant with UFC 3-535-01, *Visual Air Navigation Facilities*, *With Change 4*, and AFI 32-1044, *Visual Air Navigation Systems*. The existing lighting presents a hazard to taxiing aircraft who risk driving off the edge of the ramp due to poor lighting.
Construct Northern Boundary Fence (NVZR190085)	The purpose of this project is to provide an added level of security near the primary entrance to the installation.	This project is needed because the current installation fence configuration places a portion of MacDill AFB property outside of the installation boundary fence. The wooded areas of MacDill AFB property outside the boundary fence have been the site of encampments of homeless individuals, which has required increased patrols for the 6th Security Forces Squadron. Additionally, these wooded areas outside of the installation fence provide potential coverage for people intent on gathering intelligence about the installation or plotting damage or impact to military operations.

Project Name and Number	Purpose of the Project	Need for the Project
Extend Deployed Unit Complex (DUC) Ramp (NVR190077)	The purpose of this project is to allow sufficient space for aircraft to safely maneuver when parking or accessing the DUC ramp.	This project is needed because the current paved area of the DUC ramp is not large enough to safely accommodate newer aircraft that utilize this aircraft parking area.
Culvert Repair and Replacement	The purpose of this project is to prevent collapse of existing deteriorating stormwater culverts and maintain access to adjacent critical areas, including the Alert Facility, UH-60 complex, Fire Department and Airfield Lighting Vault, and western airfield, which would be cut off by the collapse of a stormwater culvert.	This project is needed because the selected current stormwater culverts are deteriorating and at risk of collapse. The collapse of the culvert along Southshore Avenue would restrict access to the Alert Facility (mission critical) and UH-60 complex. Collapse of the culvert on Marina Bay Drive would also restrict access to the Fire Department, Airfield Lighting Vault, Munitions Storage Area, Small Arms Range, and other essential facilities. Collapse of the culvert along Bayshore Boulevard near Zemke Avenue would dramatically restrict transportation movement for vehicles exiting the installation. Collapse of the culvert on West Boundary Street would restrict access to the western end of the airfield and runway.
Demolition Projects		
Demolish Building 82 (NVZR220042)	The purpose of this project is to support MacDill AFB's ongoing effort to reduce facility inventory by eliminating degraded buildings, thereby, reducing maintenance costs and creating vacant land that is available for future development as MacDill AFB's mission and mission partners continue to expand.	This project is needed because Building 82 has been deemed unsuitable for re-use and has been assessed as too costly to renovate to meet future mission needs as a storage facility. Removal of this facility would eliminate labor and materials costs associated with maintenance and repair of the building and create open space for future mission needs. Demolition of Building 82 would eliminate the last facility on a very large piece of land that could be used for a large facility or building complex to support the beddown of a unit or mission partner in the future.

Source: MacDill AFB 2019a, 2023

Key: JCSE – Joint Communication Support Element; AT/FP – antiterrorism/force protection; DUC – Deployed Unit Complex

1.7 Interagency/Intergovernmental Coordination and Consultations

1.7.1 Interagency Coordination and Consultations

Scoping is an early and open process for developing the breadth of issues to be addressed in an Environmental Assessment and for identifying significant concerns related to a proposed action. Per the requirements of Intergovernmental Cooperation Act of 1968 (42 USC Section 4231(a)) and EO 12372, *Intergovernmental Review of Federal Programs*, federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action were notified during the development of this IDEA. **Appendix A** provides the list of agencies consulted during this analysis and copies of correspondence.

1.7.2 Government to Government Consultations

EO 13175, *Consultation and Coordination with Indian Tribal Governments*, directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. Consistent with the EO, DoDI 4710.02, *Interactions with Federally-Recognized Tribes*, and Department of the Air Force Instruction (DAFI) 90-2002, *Air Force Interaction with Federally-recognized Tribes*, federally-recognized tribes that are historically affiliated with the MacDill AFB geographic region will be invited to consult on proposed undertakings included in this IDEA. These undertakings may have potential to affect properties of cultural, historical, or religious significance to the tribes. Consultation with the tribes will also meet the requirements of Section 106 of the NHPA. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process, and it requires separate notification of all relevant tribes. The timelines for tribal consultation are also distinct from those of other consultations. The MacDill AFB point-of-contact for Native American tribes is the Installation Commander. The Native American tribal governments with which the DAF will coordinate and consult regarding these actions are listed in **Appendix A**.

1.7.3 Other Agency Consultations

Per the requirements of NHPA Section 106 and its implementing regulations, Section 7 of the ESA and its implementing regulations, the Marine Mammal Protection Act, and the Coastal Zone Management Act (CZMA), findings of effect and requests for concurrence were transmitted to the Florida State Historic Preservation Officer (SHPO), the United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service, Florida Fish and Wildlife Commission, and the Florida State Clearinghouse, respectively. Correspondences and determinations received on the Draft EA through these consultation processes will be included in **Appendix A**.

The federal Coastal Zone Management Program comprehensively addresses national coastal issues between the federal government and coastal states and territories. Authorized by the CZMA of 1972 (16 USC Section 1451 *et seq*., as amended), the program aims to protect, restore, and responsibly develop the nation’s diverse coastal communities and resources. The coastal zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The National Oceanic

and Atmospheric Administration administers the federal CZMA program. Section 307 of the CZMA, called the "federal consistency" provision, provides a state with input authority in federal agency decision making for activities that may affect a state's coastal uses or resources. Federal agency activities must be consistent to the maximum extent practicable with the enforceable policies of a state's coastal management program. The Proposed Actions would be consistent with the Florida Coastal Management Program. The Florida Department of Environmental Protection (FDEP) and United States Army Corps of Engineers (USACE) would be consulted and involved in the design process for the Culvert Repair and Replacement project. A Federal Consistency Determination Letter (**Appendix A**) has been prepared for FDEP review, concurrent with the Draft IDEA public review period. Florida agency correspondences, including the FDEP coastal consistency determination, will be incorporated into Appendix A, as received.

1.8 Public and Agency Review of EA

Because the Proposed Action area coincides with floodplains and wetlands, it is subject to the requirements and objectives of EO 11988, *Floodplain Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and EO 11990, *Protection of Wetlands*. The DAF published early notice that a portion of the Proposed Action would occur in floodplains and wetlands in the T*ampa Bay Times* on March 3, 2024. The notice solicited public comment on the Proposed Action and any practicable alternatives. The comment period for public and agency input on these projects ended on April 5, 2024. A copy of the early public notice is provided in **Appendix B.**

A Notice of Availability (NOA) for the Draft IDEA and FONSI/FONPA was published in the local newspapers. Copies of the Draft IDEA and FONSI/FONPA were made available for review at the following locations:

John F. Germany Public Library
900 North Ashley Drive
Tampa, FL 33602

MacDill AFB Public Library
8102 Condor Street
Tampa, FL 33621

Copies of the NOA and public and agency correspondences and comments received during the comment period will be provided in **Appendix B** of the Final EA.

1.9 Decision to be Made

The IDEA evaluates whether the Proposed Action would result in significant impacts on the human environment. If significant impacts are identified, MacDill AFB would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an Environmental Impact Statement addressing the Proposed Action, or abandon the Proposed Action.

This IDEA is a planning and decision-making tool that will be used to guide MacDill AFB in implementing the Proposed Action in a manner consistent with DAF standards for environmental stewardship.

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2. Description of the Proposed Action and Alternatives

2.1 Proposed Action

This IDEA evaluates the potential environmental impacts that may arise from the implementation of nine installation development projects (see **Table 2-1** and **Figure 2-1**) selected from the 2019 IDP at MacDill AFB. This document treats each project as a discrete proposed action and evaluates each project and its alternatives separately. These projects include initiatives for facility construction, infrastructure construction and repair, and demolition; although most of the projects involve some combination of facility construction, infrastructure construction and repair, and demolition, projects were categorized based on the primary associated action.

2.2 Selections Standards for Project Alternatives

The scope and location of each proposed action and, where applicable, their alternatives, have undergone extensive review by 6 ARW Civil Engineering Squadron personnel, local government agencies, and supporting installation and DAF staff specialists.

Potential alternatives to the proposed actions were each evaluated based on three universal selection standards, which were applied to all alternatives.

Selection Standard 1: The alternative(s) must meet the purpose of the Proposed Action to remedy deficiencies in the infrastructure of MacDill AFB. The alternative(s) must also address the need to provide and maintain infrastructure that is adequate to support the installation's mission and applicable DAF, DoD, federal, and state requirements. Alternatives must also satisfy the purpose of and need for each individual project.

Selection Standard 2: The alternative(s) must make as much use as possible of existing land and facilities, avoid creating or maintaining redundant space or infrastructure, avoid or minimize operational inefficiencies, and represent the most cost- and operationally-effective and sustainable alternative.

Selection Standard 3: The alternative(s) must be consistent with all MacDill AFB internal planning documents and zoning requirements, applicable installation architectural compatibility guides, and relevant legal and regulatory requirements, and must accommodate applicable, known man-made and natural development constraints.

Table 2-1. Installation Development Projects

Project Name and Number	Implementation Year (FY)	Description of the Project	Estimated Area of Disturbance (SF)	Estimated Net Change in Impervious Surface Area (SF)
Facility Construction Projects				
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	2029	Demolish Buildings 848, 860, 861, 863, 886, and 887, and three sheds, to consolidate those activities into a new headquarters facility and adjacent warehouse with more efficient spaces for operations, administration, storage, and deployment staging. Extend the complex boundary wall to encompass the parking area southeast of the complex and associated utility infrastructure within the complex.	132,000	0
Construct Bayshore Gate (NVZR190031)	2026	Demolish existing guardhouse and original canopy and construct new guardhouse and canopy. Replace the existing wedge-style barrier system with a modern grab-net type vehicle barrier system. Roadway and electrical improvements would be included in the project as well.	25,000	+4,400
JCSE RUBB Facility Replacement (NVZR180048)	2026	Demolish existing steel framed canopy structure and construct new warehouse and office space for JCSE.	15,000	0
Infrastructure Construction and Repair Projects				
Widen Zemke Avenue (NVZR180060)	2025	Construct additional lane on Zemke Avenue between South Boundary Boulevard and Bayshore Boulevard to alleviate traffic congestion.	7,000	+7,000
Apron Flood Lighting (NVZR173710)	2028	Install apron flood lighting along eastern and western edges of south apron at the airfield. New electrical connections would be included in construction.	275,000	0
Construct Northern Boundary Fence (NVZR190085)	2025	Construct approximately 6,000-linear-foot installation boundary fence and relocate an existing asphalt walking path managed by the City of	300,000	0

Project Name and Number	Implementation Year (FY)	Description of the Project	Estimated Area of Disturbance (SF)	Estimated Net Change in Impervious Surface Area (SF)
		Tampa. Fence requires a 30-foot buffer be cleared on either side for visual patrol.		
Extend DUC Ramp (NVR190077)	2027	Add new shoulder pavement onto existing DUC ramp.	20,000	+20,000
Culvert Repair and Replacement (NVZR# TBD)	Multiple	Repair and replace four culverts and headwalls around the installation.	N/A	0
Demolition Projects				
Demolish Building 82 (NVZR220042)	2025	Demolish Building 82 as it is unused, unneeded, and its replacement value exceeds its renovation cost.	7,000	-7,000
Estimated Total Net Change in Area of Disturbance and Impervious Surface Area (SF)			**781,000**	**+24,400**

Source: MacDill AFB 2019a, 2023

Key: FY – Fiscal Year; SF – square feet; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex

Figure 2-1. Location Ron MacDill AFB of Installation Development Projects

2.3 Proposed Actions and Alternatives

NEPA and CEQ regulations mandate the consideration of reasonable alternatives to a proposed action. “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need for each proposed action.

The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this IDEA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the Proposed Actions. Among the alternatives evaluated for each project is a No Action Alternative. The No Action Alternative will be substantively analyzed to determine the consequences of not undertaking the Proposed Actions, which will serve to establish a comparative baseline for analysis.

The scope, location, and objectives of the Proposed Actions are described here; grouped by project category. This section also presents reasonable and practicable alternatives for projects where multiple viable courses of action exist. Those alternatives are assessed relative to the selection standards (see **Section 2.2**) and project-specific selection standards, where applicable. Alternatives that met all three selection standards, and any project-specific selection standards, were considered reasonable and retained for consideration in this IDEA. Alternatives that did not meet one or more of the standards were considered unreasonable and are not retained for consideration in this IDEA.

2.3.1 Facility Construction Projects

2.3.1.1 JOINT COMMUNICATION SUPPORT ELEMENT (JCSE) JOINT OPERATIONS AND LOGISTICS MAINTENANCE FACILITY (NVZR193704)

Project Details: This project would demolish Buildings 848, 860, 861, 863, 886, and 887, and three sheds, to consolidate JCSE functions into a new headquarters facility and adjacent warehouse with more efficient space (see **Figure 2-2**). The new JCSE Joint Network Operations, Logistics, and Mobility Facility would consist of a two-story reinforced concrete and structural steel building on a concrete spread footing, with a standing seam metal roof. The adjacent warehouse would also be two-stories and built of similar materials. Amenities would include covered loading docks; roll-up doors; material storage rack systems; pallet scale/pit; armory; fire suppression and alarm systems; Joint Operations Center, computer server room systems, and infrastructure; uninterruptable power supply systems; emergency generator; site improvements; adjacent vehicle parking; and all other necessary utility support. The new facilities would need to have a final elevation that is at least 3 feet above the Federal Emergency Management Agency (FEMA) flood elevation for this portion of the installation.

Demolition actions would allow MacDill AFB to extend the JCSE complex boundary wall to enclose the existing parking area southeast of the complex and reroute utilities inside of the complex. The new facility complex is anticipated to be approximately 132,000 square feet (SF). All proposed demolition and new construction would occur within the existing JCSE compound. Because the JCSE complex is currently asphalted, there would be no change in impervious surface area from the project. Project demolition and construction actions would be phased to minimize impediments on compound operations.

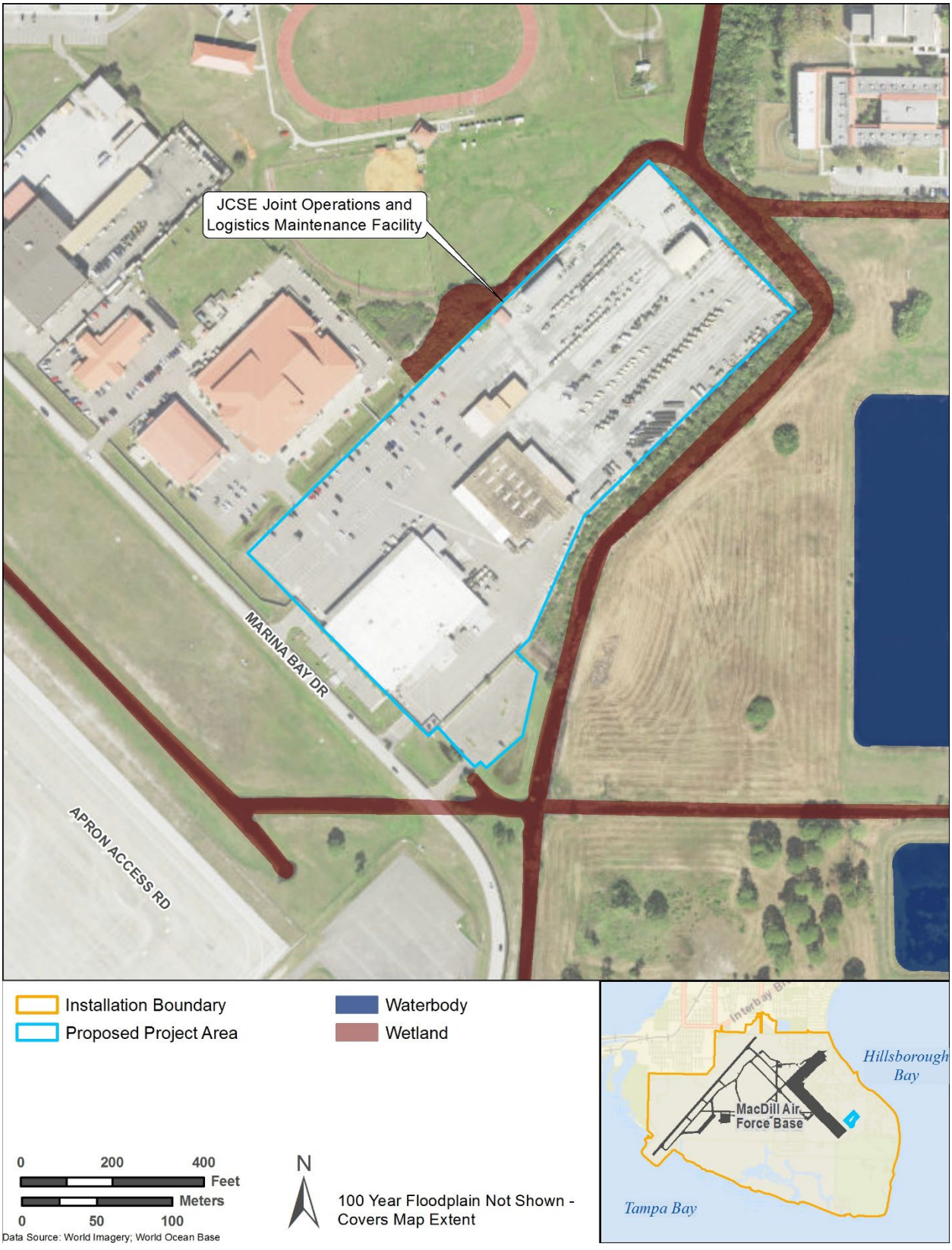

Figure 2-2. JCSE Joint Operations and Logistics Maintenance Facility Location

Table 2-2 presents the size, year built, and use for each of the buildings proposed for demolition.

Table 2-2. Buildings to be Demolished for the JCSE Joint Operations and Logistics Maintenance Facility

Building Number	Building Size (SF)	Year Built	Building Purpose
848	2,400	1982	JCSE Supply and Equipment, Building Services Equipment (BSE) Warehouse
860	338	1970	JCSE Vehicle Service Rack
861	64,864	1970	JCSE Supply and Equipment, BSE Warehouse
863	3,450	1971	Aircraft Loading Training Aid
886	4,625	1982	JCSE Supply and Equipment, BSE Warehouse
887	1,050	1982	JCSE Supply and Equipment, BSE Warehouse; JCSE Training Classroom

Key: SF – square foot; JCSE – Joint Communication Support Element; BSE – Building Services Equipment

Environmental Constraints: Identified environmental constraints for the project include the 100-year floodplain, nearby closed sites managed under the installation's Environmental Restoration Program (ERP, discussed in **Section 3.9**), and the canal lining the existing paved complex to the east, north, and west (see **Figure 2-2**). Additionally, Tinker K-8 School is located approximately 0.1 miles to the east, and a recreational area is located approximately 0.2 miles to the north.

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** Because JCSE operations and facilities already exist within a dedicated and secure compound on the installation, it was determined that the development actions for the proposed JCSE Joint Operations and Logistics Maintenance Facility were reasonably limited to the existing location. Other alternatives considered but dismissed for this action included relocation of the JCSE compound to a new location or development of a new JCSE Joint Operations and Logistics Maintenance Facility in a separate location, but these alternatives would not meet Selection Standards 2 and 3 because of the loss of operational efficiency and security, and associated costs.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.1.2 CONSTRUCT BAYSHORE GATE (NVZR190031)

Project Details: The project would involve demolition of the existing guardhouse (4,360 SF) and original canopy following construction of a new guardhouse and canopy south of the existing gatehouse behind the current guard booths (see **Figure 2-3**). Additionally, the current wedge vehicle barrier system further south of the guardhouse on Bayshore Boulevard would be replaced with a grab net vehicle barrier system. Roadway and electrical improvements would be included in the project.

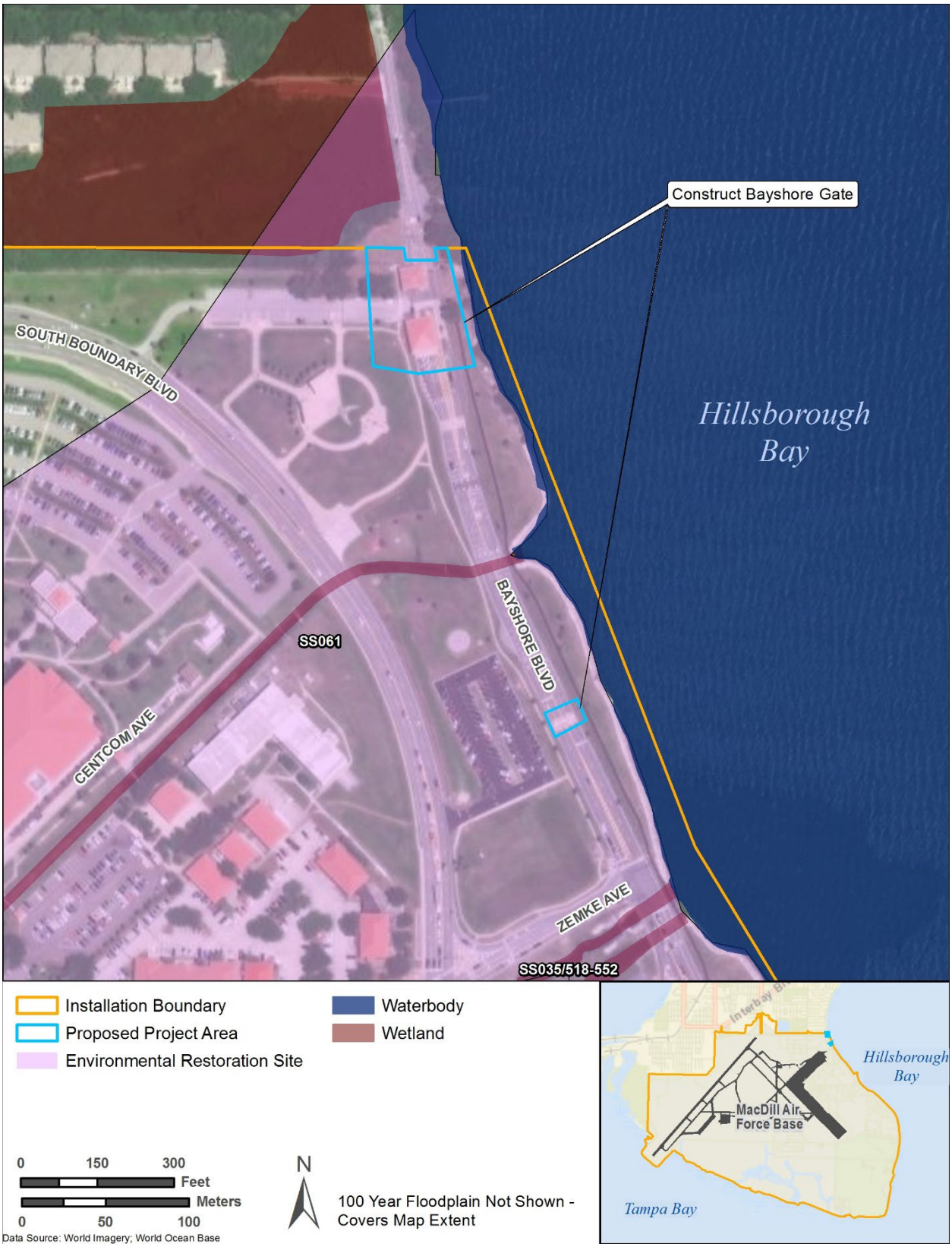

Figure 2-3. Construct Bayshore Gate Location

The roadway would be reconfigured slightly and possibly widened slightly to provide a more sinuous approach for entry and exit to dampen traffic speeds. The reconfigured gate and associated facilities would add approximately 4,400 SF of impervious surface area on the installation. Currently, queuing into the entry lanes and the check in process is reversed from the proper order of operations for security purposes.

The project would relocate the guardhouse that is currently north of the traffic check facility to provide the required AT/FP open level of service of all vehicles approaching the gate. The gate is open from 5:30 am to 9:00 pm on weekdays and is closed after hours.

As a critical facility, the finished floor elevation for this guardhouse would be at least 3 feet higher than the FEMA flood elevation for this portion of the installation.

Environmental Constraints: Identified environmental constraints for the project include the coastal floodplain and risk of overflow/wave action at the site, 100-year floodplain, risk of inundation from sea level rise and storm surge events, and nearby sites managed under the ERP (see **Figure 2-3**).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** Considering the facility requirements and environmental constraints, the 6 ARW determined that the proposed Bayshore Gate improvements would be limited to the site of the existing location. Further, due to presence of nearby constraints, design options for facility orientation and development of supporting infrastructure were limited to the existing roadway, road shoulders and west-adjacent parking area. Options that would substantially alter the existing orientation or location would not be feasible in accordance with Selection Standard 2 and were therefore dismissed from further consideration.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in the IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.1.3 JCSE RUBB FACILITY REPLACEMENT (NVZR180048)

Project Details: RUBB facilities are relocatable rapid erect hangars and sunshades for military fixed-wing aircraft and helicopters. However, the JCSE RUBB Facility is used for the training of personnel on the operation and deployment of the Deployable Joint Command and Control assets and storage of the equipment. The project would demolish the existing steel framed canopy structure, and construct a new 2,783-SF warehouse with mezzanine structures for storage and office space for JCSE (see **Figure 2-4**). The existing JCSE RUBB is a temporary facility that was constructed in 2009 and has outlived its life expectancy.

The project would be developed entirely within the footprint of existing pavement at the JCSE compound, with a new antenna pad constructed next to the building. Demolition and replacement actions would occur within the existing compound, but the new JCSE RUBB replacement facility would be larger (anticipate 15,000 SF area affected for the project) and may be oriented differently to optimally support operations within the new complex configuration.

Figure 2-4. JCSE RUBB Facility Replacement Location

Construction laydown may temporarily require use of paved spaces within the compound as well as the ground area outside of and across the street from the compound. The project would also require installation of new lighting, stormwater, and other associated infrastructure.

Environmental Constraints: Environmental constraint considerations for this action would be the same as identified for the JCSE Joint Operations and Logistics Maintenance Facility; see **Figure 2-4**).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** Because JCSE operations and facilities already exist within a dedicated and secure compound on the installation, it was determined that the development actions for the proposed JCSE RUBB replacement facility were reasonably limited to the existing location. Further, due to presence of nearby constraints, design options for facility siting and development of supporting infrastructure were limited to the existing paved area where the current RUBB facility and associated operations are established. Options that would substantially alter the existing location would not be feasible and were therefore dismissed from further consideration in accordance with Selection Standard 2.

Alternatives Considered for this Project: The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.2 Infrastructure Construction and Repair Projects

2.3.2.1 WIDEN ZEMKE AVENUE (NVZR180060)

Project Details: This project would include construction of an additional turn lane on the northern side of Zemke Avenue between South Boundary Boulevard and Bayshore Boulevard (see **Figure 2-5**), which would widen the road by around 11 feet and add approximately 7,000 SF of impervious surface area. Site preparation and construction for the road widening would include surveying; maintenance of traffic; temporary erosion controls and wetting for dust control as required during construction; demolition of and replacement with new sidewalk and curb; relocation of traffic lights, pull box, footer, and mast; re-working the existing retention pond, place gravel and compact pavement subbase and base, placement of concrete for new sidewalk and curb, placement of asphalt pavement; removal and replacement of affected traffic stripping; and site restoration.

The painted lanes along the existing pavements would be shifted to accommodate the additional lane and create the dedicated right turn lane from Zemke Avenue onto Bayshore Boulevard. Existing stormwater, electricity, and other utilities and infrastructure along the north adjacent area of Zemke Avenue would be temporarily disrupted and relocated within the vicinity to accommodate the project. To account for the increase in impervious surface, relocated stormwater infrastructure would be improved or expanded beyond an in-kind replacement. Existing paved areas would be used for construction laydown.

Figure 2-5. Widen Zemke Avenue Location

***Environmental Constraints*:** Identified environmental constraints for the project include the coastal floodplain and risk of overflow/wave action at the site, the 100-year floodplain, risk of inundation from sea level rise and storm surge events, a nearby site managed under the installation's ERP, and the jurisdictional water channel approximately 25–40 feet from the existing segment of Zemke Avenue which requires a 25-foot buffer for new construction or infrastructure (see **Figure 2-5**).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** The road expansion was originally proposed on the southern side to minimize relocation efforts and costs for existing infrastructure on the north side of the existing Zemke Avenue segment. Due to the proximity of the segment to the tidal-influenced drainage canal depicted in **Figure 2-5**, the required 25-foot buffer for jurisdictional wetlands would not be possible to maintain for the entirety of the proposed roadway widening. Therefore, this alternative has been dismissed from further analysis in accordance with Selection Standard 3.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.2.2 APRON FLOOD LIGHTING (NVZR173710)

***Project Details*:** This project would install apron flood lighting along the eastern and western edges of the south apron to illuminate an approximately 275,000 SF area (see **Figure 2-6**). Installed lights would be overhead to light the edge of the airfield apron and delineate areas where safety infrastructure is missing. Although evenly spaced, the stadium light locations may be adjusted slightly to avoid impacts on gopher tortoises and burrowing owls that inhabit areas around the south apron. New electrical connections would be included in construction. Ground disturbance would occur from trenching for installation of electrical lines; trenches would be approximately 2 feet wide; however, there would be around 10 feet of disturbance along trench lines due to equipment traffic and soil placement. Construction activities would remain at least 25 feet away from the top bank of the drainage canal that lies east of the apron to avoid wetland impacts. A construction laydown area would be located on the grassy area east of the apron and north of the drainage ditch (see **Figure 2-6**).

***Environmental Constraints*:** Identified environmental constraints for the project include the 100-year floodplain, nearby sites managed under the ERP, airfield infrastructure, nearby explosive safety quantity-distance (ESQD) arc, and the MacDill AFB Historic District (see **Figure 2-6**)

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** Although positioning of individual lights may vary to avoid existing features or habitats, as needed, no practicable alternatives for locating were considered because apron lighting is a safety requirement.

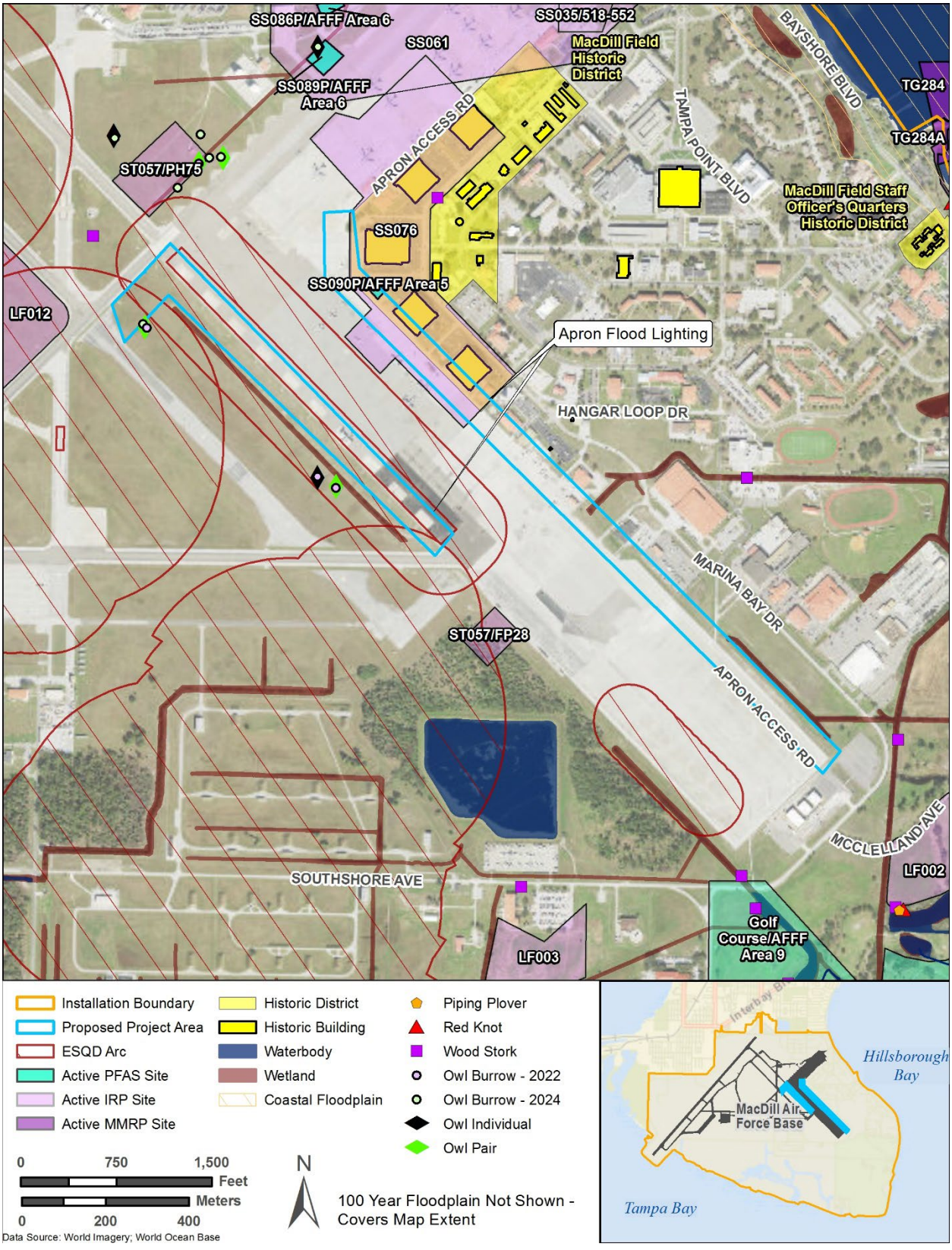

Figure 2-6. Apron Flood Lighting Location

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.2.3 CONSTRUCT NORTHERN BOUNDARY FENCE (NVZR190085)

***Project Details*:** This project would involve installation of an approximately 6,000-linear foot chain link boundary fence with barb wire along the northern boundary of MacDill AFB on both sides of the Dale Mabry Gate (see **Figure 2-7**). A 30-foot buffer would be cleared and consistently maintained on either side of the new fence to enable visual patrol (per AT/FP requirements). This project would include relocation of an existing asphalt walk and bike path on installation property as part of the City's Greenways and Trails. The recreational trail, located east of the Dale Mabry Gate, is managed by the City of Tampa. The installation would coordinate with the City, as needed, to modify the existing easement and relocate the trail outside of the new fence. Therefore, no net change in impervious surface would occur. The airfield boundary fence line would remain unchanged. Design, siting, and emplacement of the fence would avoid impacts on the pond east of Dale Mabry Gate and gopher tortoise burrows, to the extent possible.

***Environmental Constraints*:** Identified environmental constraints for the project include the 100-year floodplain, the clear zone (CZ), and suitable habitat for the gopher tortoise (see **Figure 2-7**).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** Due to AT/FP requirements and nearby constraints, there were no practicable alternatives considered for the proposed project location and orientation.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.2.4 EXTEND DUC RAMP (NVR190077)

***Project Details*:** This project would extend the existing Deployed Unit Complex (DUC) ramp with additional shoulder pavement (see **Figure 2-8**) to increase ramp capacity for aircraft. The existing DUC pavement extends 400 feet from the taxiway to the airfield access road; the project would add a width of 50 feet of pavement along the 400-foot western side of the ramp for a total of approximately 20,000 SF additional impervious surface. Construction would include disturbance of grassy, mowed, and maintained airfield vegetation and 18 inches of underlying soil for placement of new concrete. To account for the increase in impervious surface, additional stormwater management infrastructure, such as a swale, would be constructed adjacent to the DUC ramp expansion.

***Environmental Constraints*:** Identified environmental constraints for the project include the 100-year floodplain, nearby ESQD arc, and suitable habitat and areas of gopher tortoise habitat (see **Figure 2-8**).

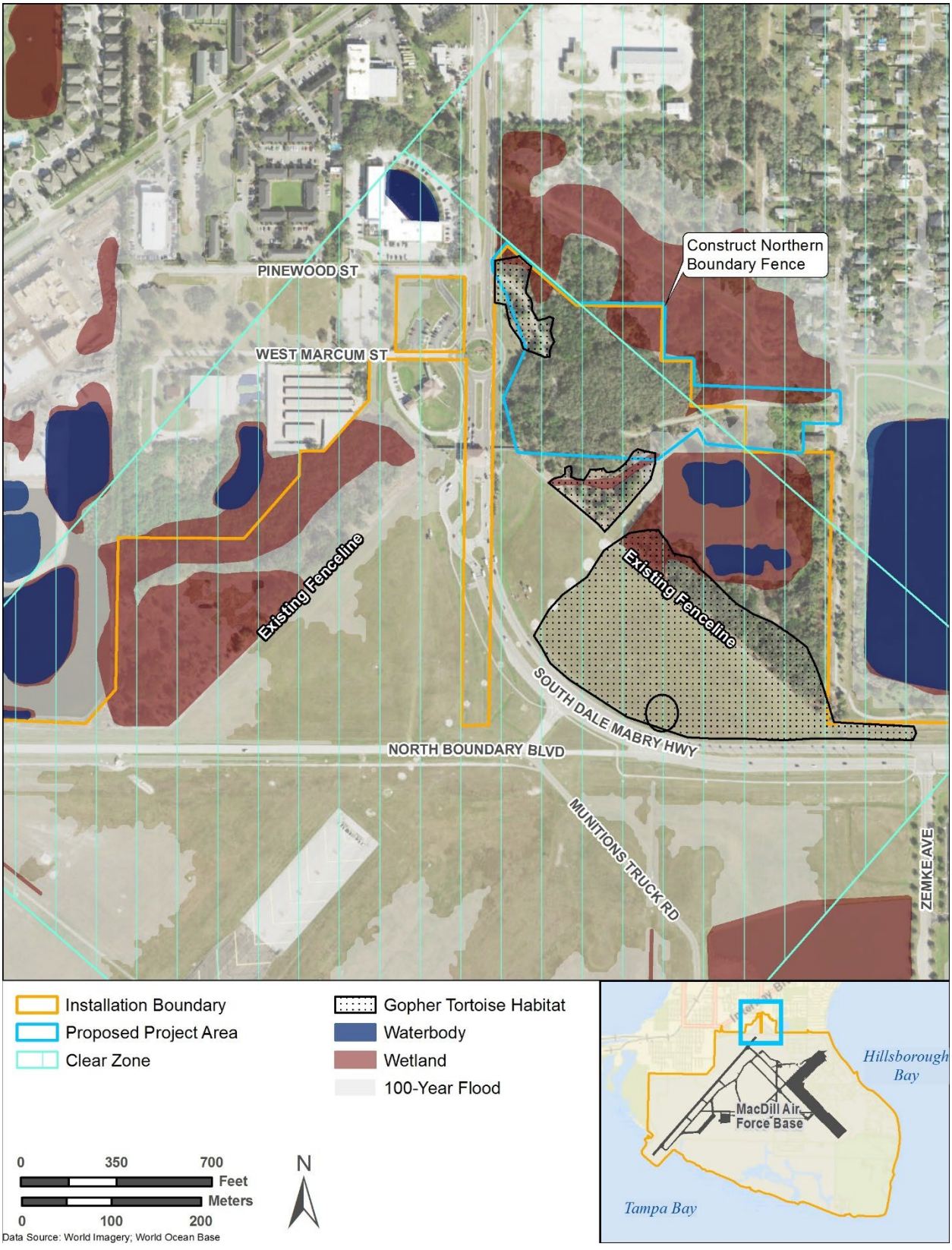

Figure 2-7. Construct Northern Boundary Fence Location

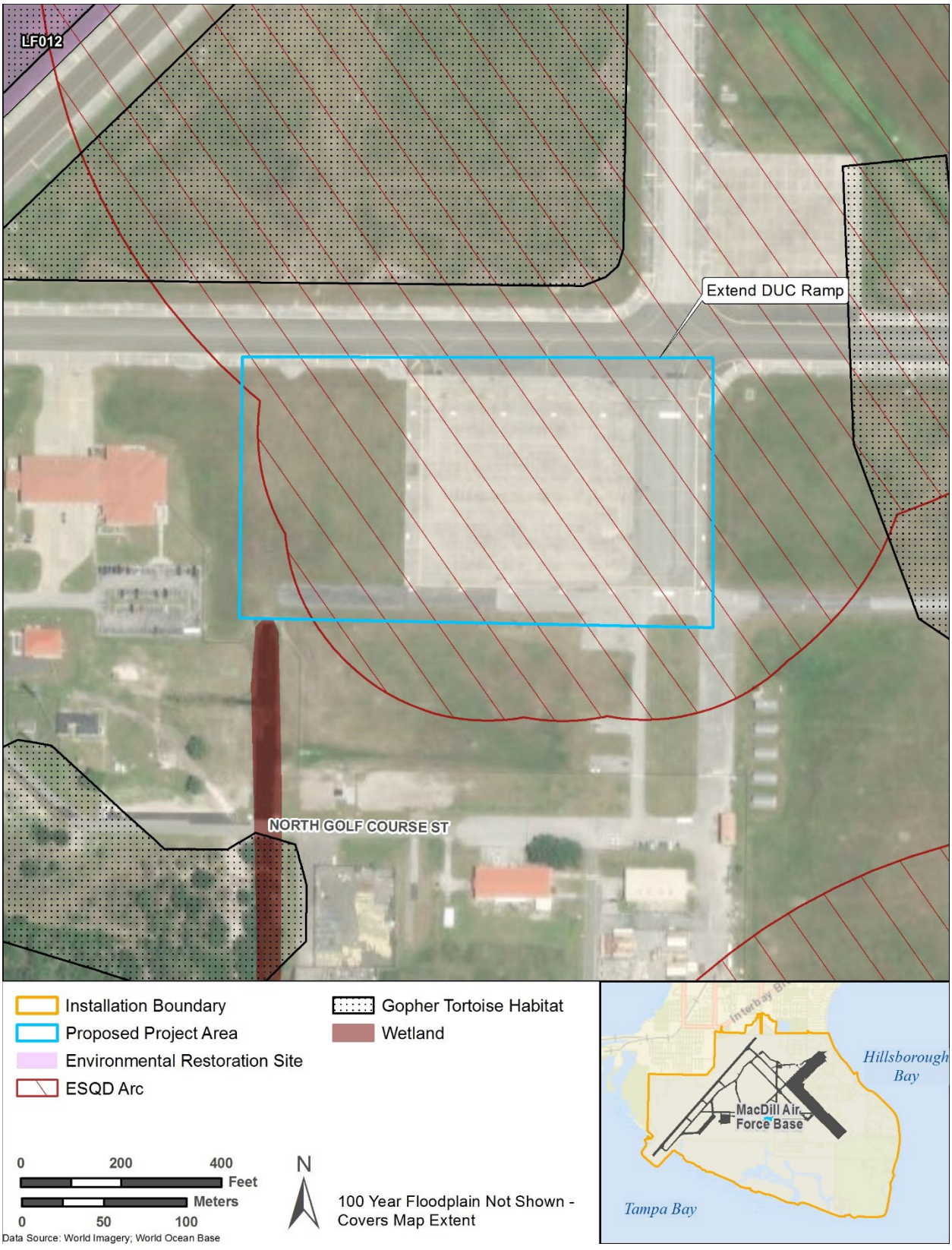

Figure 2-8. Extend DUC Ramp Location

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** The original proposal for extension of the DUC ramp involved adding 25 feet of pavement (10,000 SF) on both the east and west sides of the DUC ramp. To extend the pavement on the east side of the ramp, an adjacent stormwater outfall and swale would require relocation. In accordance with Selection Standards 2 and 3, this alternative has been eliminated from further analysis to minimize costs and environmental impacts.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.2.5 CULVERT REPAIR AND REPLACEMENT

***Project Details*:** This project involves phased repair and replacement of multiple culverts and headwalls around the installation across multiple years. The culverts selected for replacement include the Bayshore Boulevard, Marina Bay Drive, Southshore Avenue, and West Boundary Street culverts (see **Figures 2-9, 2-10, 2-11,** and **2-12,** respectively). The project would replace existing deteriorating or inadequate rounded culverts with new box culverts to provide a more open flow and lasting infrastructure. Additionally, the existing culverts lack infrastructure to keep manatees from entering into the installation's ditch system. The new culverts would be designed with USFWS-approved manatee barrier infrastructure. Each culvert project would include trimming and limited removal of mangrove limbs for access to the existing culverts and installation of new culverts. Some wetland impacts would be unavoidable during culvert replacement but would be minimized to the extent practicable. Appropriate permits and mitigations would be coordinated with the USACE, FDEP, and Environmental Protection Commission of Hillsborough County during the design process. In addition to installation of new culverts, the roadway overlaying each culvert would be replaced through phased construction.

***Environmental Constraints*:** Identified environmental constraints for the project include the 100-year floodplain; and wetland, mangrove tree, and potential manatee impacts (see **Figures 2-9, 2-10, 2-11,** and **2-12,** respectively).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** There are no practicable alternatives to the proposed project as the locations of existing culvert channels are adequate to collect stormwater runoff, and there are no other stormwater collection and transfer methods that would be cost-effective to install and operate. The current stormwater culverts need to be replaced to prevent canal blockages caused by deterioration and potential collapse.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

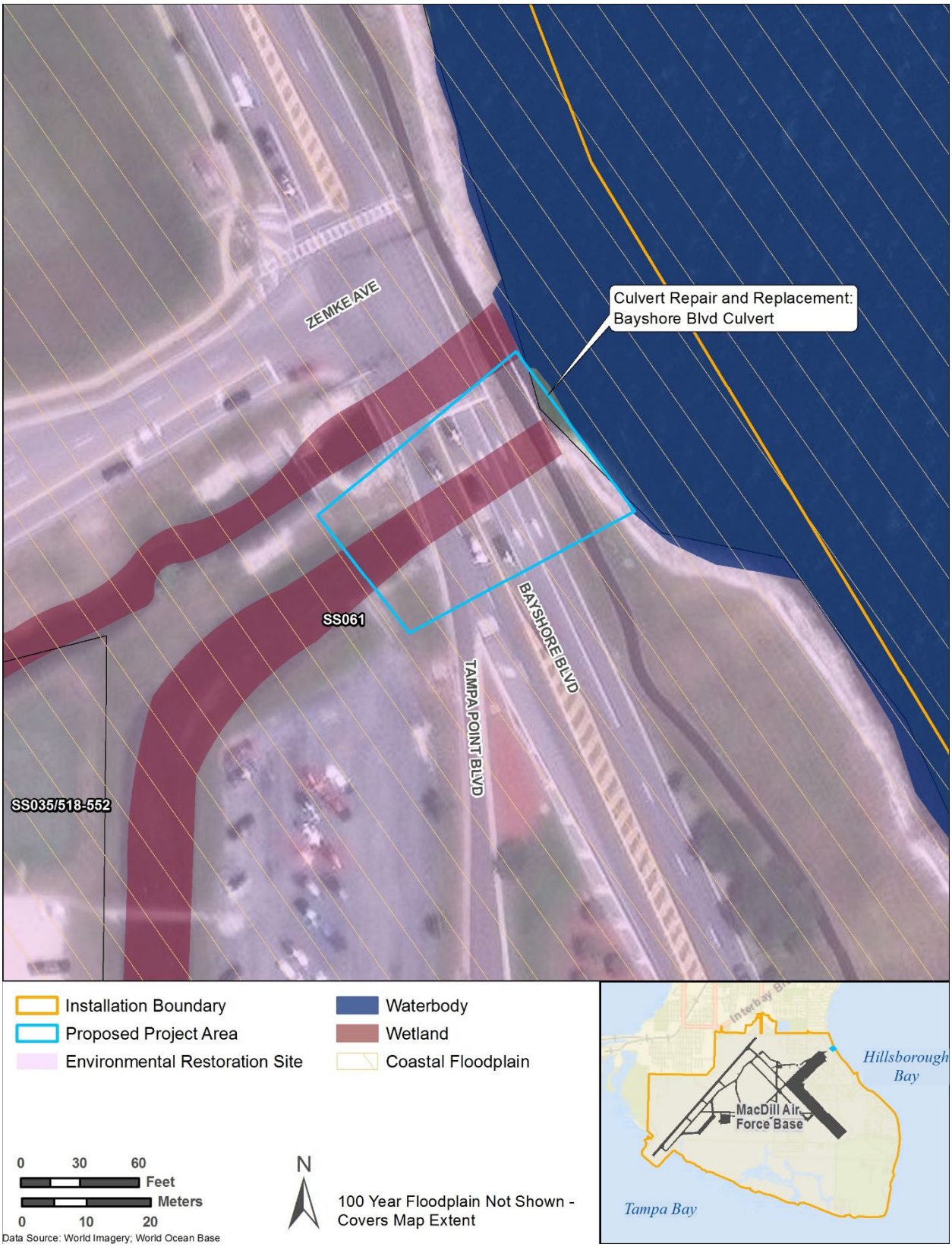

Figure 2-9. Culvert Repair and Replacement: Bayshore Boulevard

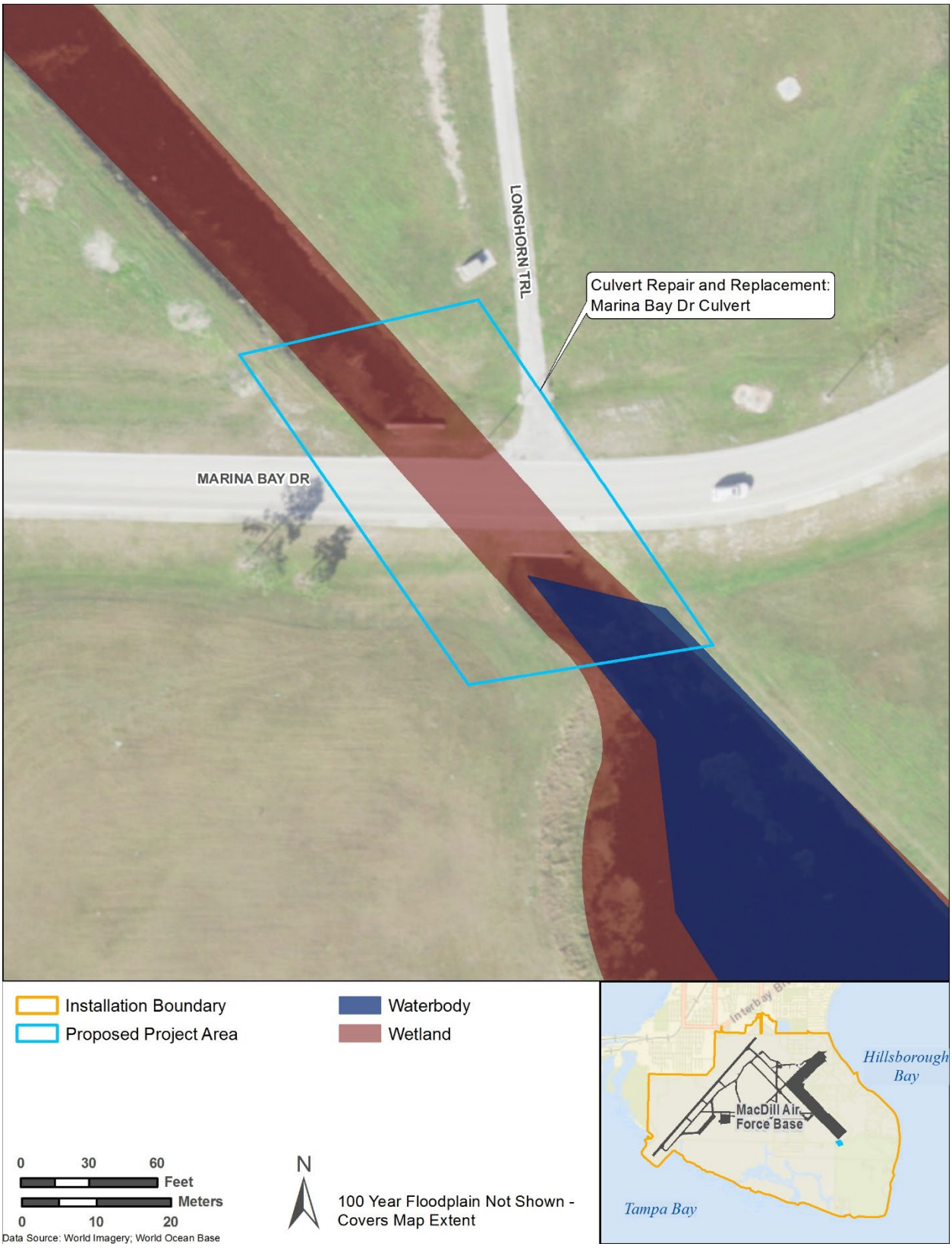

Figure 2-10. Culvert Repair and Replacement: Marina Bay Drive

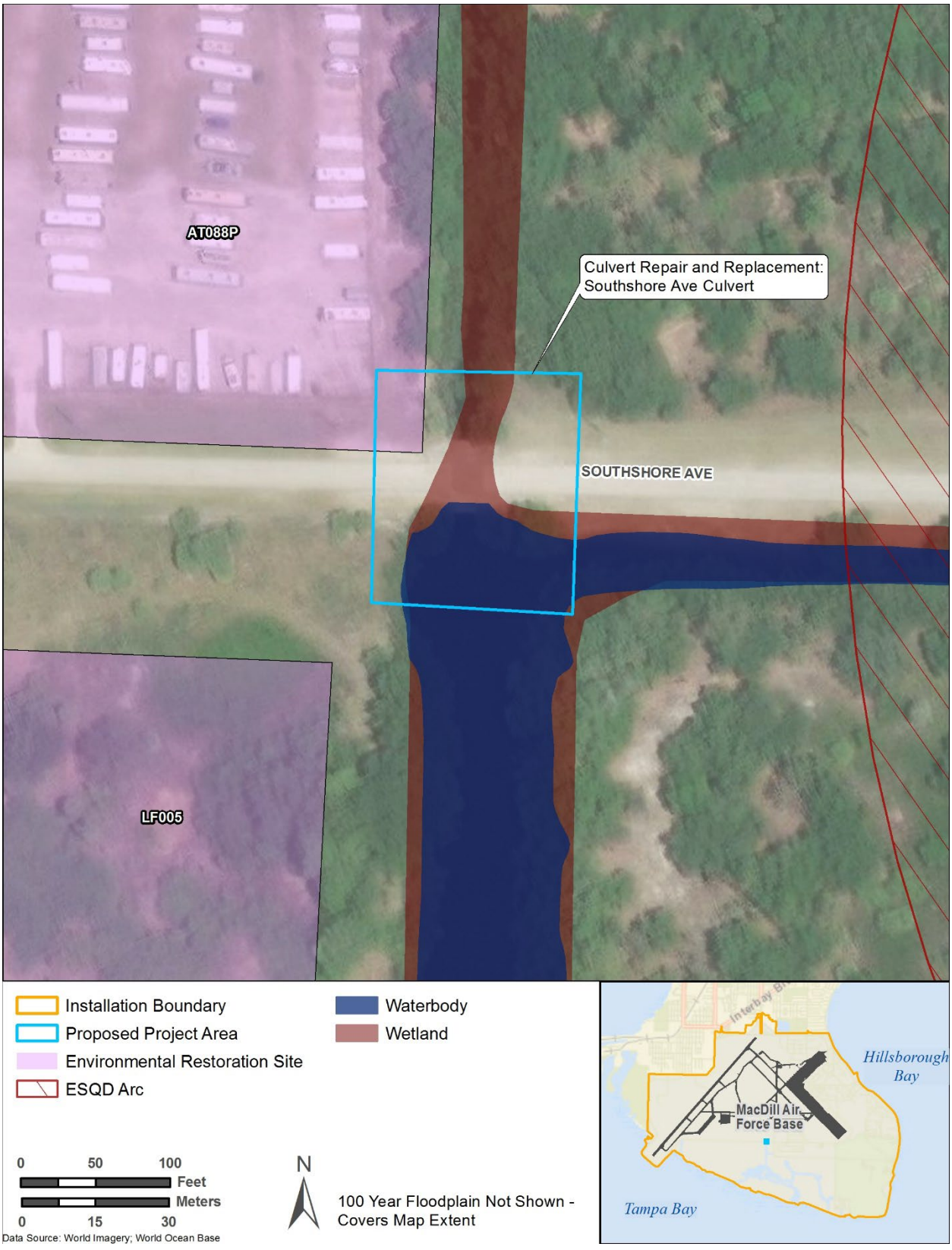

Figure 2-11. Culvert Repair and Replacement: Southshore Avenue

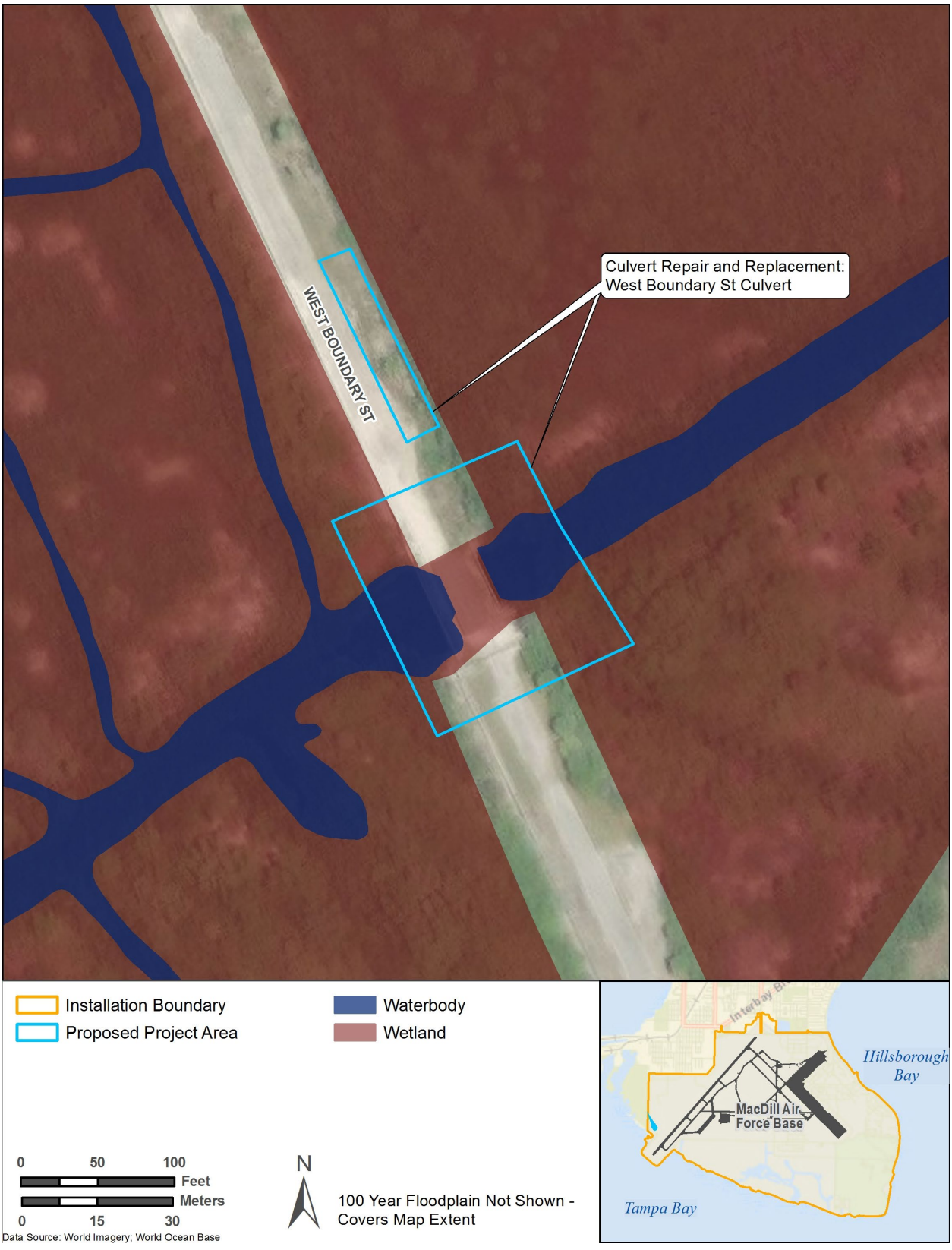

Figure 2-12. Culvert Repair and Replacement: West Boundary Street

2.3.3 Demolition Projects

2.3.3.1 DEMOLITION OF BUILDING 82

***Project Details*:** This project would demolish the 3,982 SF Building 82 and associated infrastructure. Building 82 was constructed in 1954 and is listed in the MacDill AFB building inventory as an administrative facility (see **Figure 2-13**). The building is unused, unneeded, and its renovation value exceeds its replacement cost. Project activities would affect an area that is approximately 7,000 SF due to demolition and removal of the building, associated curb, sidewalk, and utilities infrastructure from the site. Upon completion of demolition, the site would be resodded and seeded with native vegetation. The building has been evaluated and determined to not be eligible for listing on the National Register of Historic Places (NRHP). The site is located immediately west of a site managed under the installation ERP but does not overlap the active remediation area.

***Environmental Constraints*:** Identified environmental constraints for the project include the 100-year floodplain, and proximity to a site managed under the installation ERP and active remediation efforts (see **Figure 2-13**).

***Additional Project-Specific Selection Standards*:** None.

***Alternatives Considered but Eliminated from Further Analysis*:** No practicable alternatives were considered, in accordance with Selection Standard 2, as the facility renovation value exceeds its replacement cost.

***Alternatives Considered for this Project*:** The proposed action alternative as described above is carried forward for detailed analysis in this IDEA, along with the No Action Alternative described in **Section 2.3.4**.

2.3.4 No Action Alternative

In accordance with CEQ NEPA regulations, the No Action Alternative provides the baseline against which the potential environmental impacts from the proposed alternatives can be compared. Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur and mission support activities would continue to rely on the existing facilities and infrastructure. The existing facilities would continue to be inappropriately sized, and in some cases deteriorating or uninhabitable, and therefore insufficient to support current and future mission needs for the 6 ARW and MacDill AFB mission partners; would continue to degrade to failure and be insufficient to support existing and future mission needs; would continue to violate AT/FP and safety requirements; and traffic congestion on the installation would continue to impede operational efficiency on the installation.

The No Action Alternative would not meet the purpose of or need for the Proposed Actions as described in **Sections 1.2** and **1.3**; however, the DAF EIAP (32 CFR 989.8[d]) requires consideration of the No Action Alternative. Therefore, the No Action Alternative will be carried forward for detailed analysis in the IDEA.

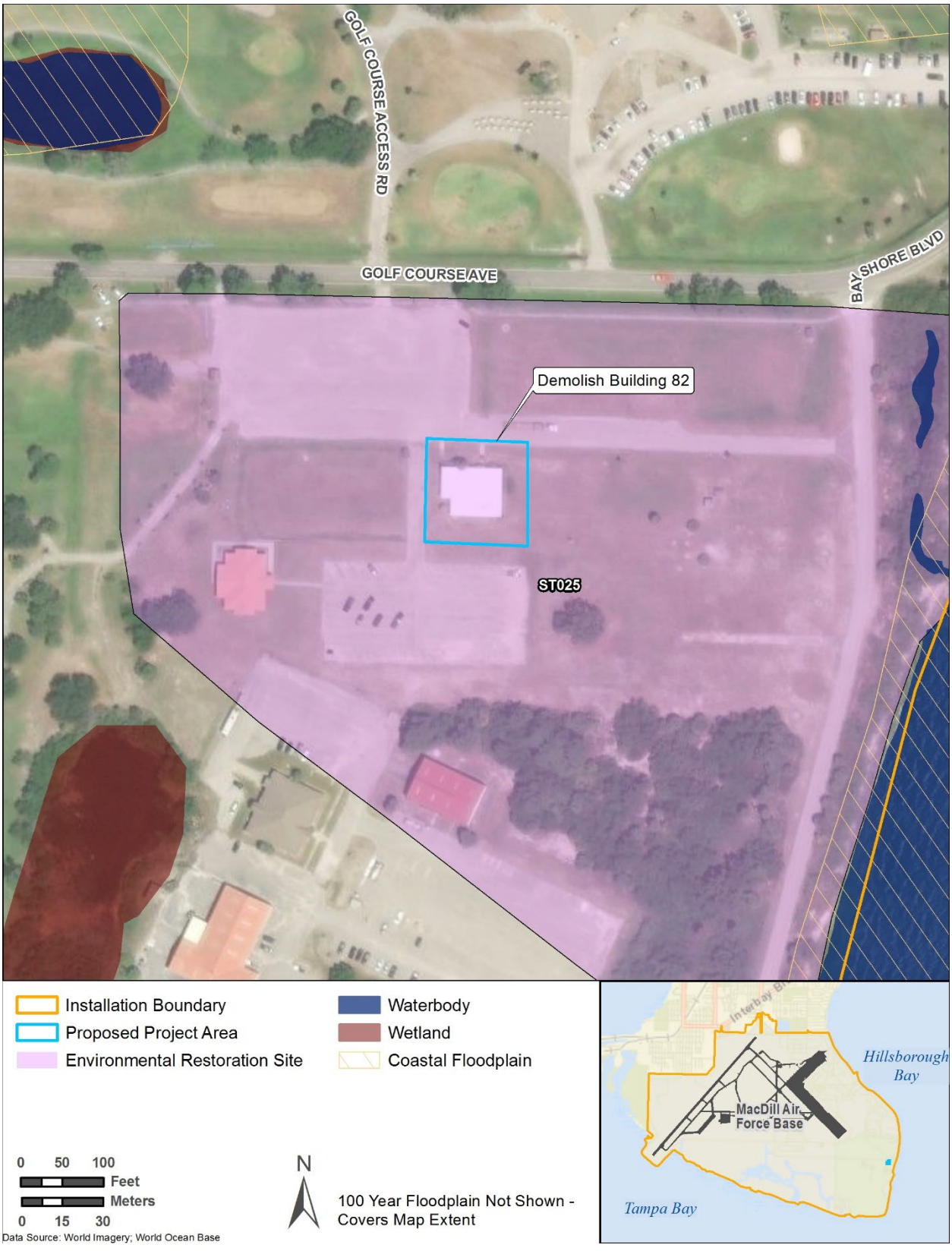

Figure 2-13. Demolition of Building 82 Location

3. Affected Environment and Environmental Consequences

3.1 Introduction

This section describes the natural and human environment that could be affected by implementation of the Proposed Action and alternatives, including the No Action Alternative. In compliance with guidelines established by NEPA, CEQ regulations, and 32 CFR 989, *Environmental Impact Analysis Process*, the description of the affected environment focuses on only those aspects of the resource potentially subject to impacts. The affected environment description is limited to MacDill AFB and adjacent land and marine spaces in Tampa, Florida.

Sections 3.2 through **3.12** provide the affected environment discussions and impacts analyses for the following resources: noise, land use, air quality, biological resources, water resources, infrastructure and transportation, geological resources, cultural resources, hazardous materials and waste, recreational and visual resources, and environmental justice. **Section 3.13** discusses the irreversible and irretrievable resource commitments expected under the Proposed Actions. **Appendix C** includes a series of sustained compliance actions that are currently in place for MacDill AFB, and that would continue to be implemented under the Proposed Actions in accordance with applicable regulations or DAF guidance in addition to the best management practices (BMPs) discussed in **Sections 3.2** through **3.12**.

3.1.1 Resource Areas Eliminated from Further Analysis

The determination of issues to be analyzed in detail in this IDEA and those not carried forward for detailed analysis is part of the IDEA scoping process as described in 40 CFR 1501.9(f)(1), which states that issues addressed in prior environmental reviews or that are not significant may be eliminated from discussion in the IDEA. No impacts or negligible impacts would be expected on the following resource areas from implementation of the Proposed Action or alternatives, and as such, were found to not be significant and are not being carried forward for detailed analysis:

- ***Land Use.*** The Proposed Actions would further goals and objectives included in the 2019 IDP to ensure optimized land use, mission efficiency, and readiness. Because all proposed projects would be compatible and permitted within their respective land use planning districts, no adverse impacts would be expected, and this resource is not carried forward for detailed analysis in the IDEA.
- ***Geology and Geologic Hazards.*** No changes to geologic structures would occur under the Proposed Actions, nor would impacts on or from geologic hazards be expected. Therefore, geology and geologic hazards have been eliminated from detailed analysis in the IDEA.
- ***Airspace Management.*** Under the Proposed Actions, no changes to current airspace configurations, ongoing intermittent flight activities on or near the installation, or flight training would occur. Similarly, the No Action Alternative would not change any current airspace features or flight patterns for aircraft in the area. The DAF anticipates no impacts on airspace management; therefore, airspace management has been eliminated from detailed analysis in this IDEA.

- ***Socioeconomics.*** Construction and demolition associated with the Proposed Actions would result in temporary increases in payroll tax revenue from hired construction workers and the purchase of construction materials and goods in the local area. Long-term, the new facilities and infrastructure would provide modern, more energy efficient, and right-sized administrative, storage, and instructional spaces that would contribute to a lower operating cost at the installation compared with existing conditions.

3.1.2 Reasonably Foreseeable Actions

As noted in **Section 1.1**, this IDEA was prepared in accordance with the 2020 CEQ NEPA regulations (40 CFR 1500), as amended, and therefore analyzes the cumulative environmental impacts from the Proposed Action combined with potential impacts from reasonably foreseeable actions. CEQ regulations implementing the procedural provisions of NEPA define cumulative effects as follows (40 CFR 1508.1[g][3]):

> "Effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Past actions are those actions, and their associated impacts, that have shaped the current environmental conditions of the project area. Therefore, the impacts of past actions are now part of the existing environment and are included in the affected environment described in **Sections 3.2** through **3.12**. This IDEA considers present and reasonably foreseeable actions at MacDill AFB that could have a causal relationship to the Proposed Action and may result in cumulative impacts. These present and reasonably foreseeable actions are listed in **Table 3-1**. The cumulative effects on the environment that would result from the incremental impacts of the Proposed Action, when combined with the potential impacts of the present and reasonably foreseeable actions, are discussed qualitatively in the respective impacts section of each resource area in **Sections 3.2** through **3.12**.

Table 3-1. Reasonably Foreseeable Actions

Project Name	Timeframe (FY)	Description
Installation Projects		
Power Generation Facility	2023–2025	The DAF has an energy insurance lease under Tampa Electric Company (TECO) to construct and operate a distributed power generation facility at MacDill AFB (MacDill AFB 2022a).
Integrated Natural Resources Management Plan Projects	2025–Future	The DAF is planning to implement multiple projects to enhance natural resources, including creation of wetlands, upland and wetland habitat restoration activities, coastal protection and installation resilience projects, land management actions, natural resources surveys and monitoring, and the expansion of recreational opportunities per the installation's INRMP. It is anticipated that the DAF will initiate an EA to evaluate impacts from its proposal in 2025. Projects are planned for implementation on a 5-year timeline.
Pipeline Replacement	2024–2026	MacDill AFB proposes to replace the pipeline from Chevron to the Defense Fuel Supply Point facility (DAF 2021).
USSOCOM Military Information Support Operations (MISO) Facility	2024–2026	USSOCOM has constructed temporary MISO facilities and has planned for permanent MISO facilities on the installation. The location previously selected for the MISO permanent facility has been changed, so NEPA must be conducted for the new proposed MISO facility location at MacDill AFB (MacDill AFB 2019a).
USSOCOM – Special Operations Forces Operations Integration Facility	2024–2026	The National Security Council has directed a USSOCOM mission to operate at MacDill AFB. Offices within USSOCOM Headquarters at MacDill AFB have been remodeled to create 50 additional seats for personnel to begin the assigned mission. USSOCOM however needs a secure and segregated facility with secure network access for 180–190 personnel at a time to operate to accomplish the assigned mission. A permanent facility is being planned and would be constructed to support this mission in 2025, but it would not be ready when this mission is directed to begin in 2022. The temporary building serves as facilities for USSOCOM until the permanent facility can be constructed. The modular and permanent facilities would be located just north of the Special Operations Command Central compound in the location of the current ground maintenance facilities. The grounds maintenance facilities would be relocated.
Florida Government Utility Authority (FGUA) Sanitary Sewer Effluent Deep Injection Well	2024–2027	FGUA's wastewater permit currently allows for land application re-use on the golf courses, with two additional sprayfields and a wet weather storage pond, but not National Pollutant Discharge Elimination System discharge. FGUA has applied for a deep injection well for disposing the sanitary sewer effluent and initial work for the project underway.
FGUA Sanitary Sewer Expansion to West Side	2024–2027	FGUA is proposing to expand the sanitary sewer system to the western side of the runway, which is currently served by septic systems. The proposed expansion would start at the new

Project Name	Timeframe (FY)	Description
		United States Army Reserve (UH-60) lift station, run to the Control Tower, and expand north and south from there (MacDill AFB 2022b).
Energy Resilience and Conservation Investment Program (ERCIP) Project – Convert Overhead Electrical Distribution to Underground	2026–2028	The ERCIP Project will recapitalize 31,600 linear feet of primary overhead electrical distribution systems to below ground. The Proposed Action would include installation of underground cables jacketed in Linear Low-Density Polyethylene into underground conduit encased in concrete, pad mounted transformers elevated above the 100-year floodplain, below-ground cable junction boxes, distribution panels, switchgear and associated support equipment, and streetlights mounted on new poles. Construction would include a combination of directional boring, trenching, and excavation; dewatering of the excavated trench/bored hole; backfill; compaction; disposal of spoils in excess; temporary soil stockpiling; 4-inch topsoil placement in areas; and reseeding/replanting of the disturbed ground within the project area. Work for this project is underway.
ERCIP – Energy Resilience Transmission and Substations System	2023–2025	This action would improve the installation's energy resilience by upgrading and adding redundancy to the electrical distribution system. Proposed improvements include upgrading the switch gear capacity at the Tanker Way Gate electrical substation from 25 kilovolt (kV) to 35 kV. Additionally, a total of 22,100 linear feet of new 15-kV electrical distribution lines would be installed to interconnect the Tanker Way Gate substation with the Dale Mabry Gate, the MacDill Avenue Gate, and a new 2,037-SF switching station to be constructed near the south flight apron. A 768-SF electric power station building would be constructed at the Tanker Way Gate. The 15-kV, below-ground, electrical distribution line would be housed in high density polyethylene conduit, which would be encased in concrete. Installation of the electrical line would be accomplished primarily through direct burial with directional boring used, as needed, to avoid impacts on roadways, taxiways, drainage ditches, and archaeological sites.
Fuels Operations Facility	2025	MacDill proposes construction of a new 3,580-SF fuels operation facility in the parking lot east of Building 1062. Once complete, Building 1062 would be demolished and a 4,296-SF parking lot would be constructed in its place (MacDill AFB 2020a).
Marina Channel Maintenance Dredging	2027–2028	The purpose of this action is to maintain required width and depth of the marina channel. This action is accomplished, on average, every 10 years. Maintenance dredging enables security forces to safely access the marina basin, Coon Creek basin, and Tampa Bay during all tidal levels throughout the year via two connecting channels. These channels are located within the same area on the southern portion of the installation (MacDill AFB 2016).
Fire Station	2025–Future	This action includes construction of a new approximately 16,000-SF fire station located south of Florida Keys Avenue, west of Oleander Place, and north of Administration Avenue, adjacent to the intersection of Florida Keys and Administration Avenues (MacDill AFB 2020a).

Project Name	Timeframe (FY)	Description
Logistics Readiness Squadron (LRS) Vehicle Maintenance Complex	2026/2027–Future	This action includes construction of a two-story 32,000 SF consolidated LRS Vehicle Maintenance Facility between Hangar Loop Drive and Marina Bay Drive. Demolition of Buildings 500 and 510 would be required to create space for the proposed facility, including removal of building components, concrete foundations, and portions of the asphalt parking area (MacDill AFB 2020a).
KC-46A Main Operating Base #6 (MOB 6) Beddown	2024–2028	The Proposed Action would base 24 KC-46A aircraft at MacDill AFB for the KC-46A MOB 6 beddown. To support the beddown of the aircraft, facility renovations, construction, and facility and airfield improvements would be included in the action. These facility and infrastructure projects include renovation of the air transportable galley/lavatory storage building, mission planning center/aircrew flight equipment facility, active duty air refueling squadron facilities, Air Force Reserve Command operations support squadron facility, fuselage training facility, and washracks and bird bath; construction of a new DASH-21 facility and high bay supply/bulk storage warehouse; and addition to/alteration of the aerospace ground equipment facility, jack testing pad in maintenance building, education center/airmen leadership school, corrosion control hangar 1, general purpose maintenance hangars 2 through 4, fuel cell hangar 5, wheel and tire shop, boom operator training building, aircraft maintenance unit building, fuselage training parking, and apron and hydrant fueling pits. These facility and infrastructure projects would result in approximately 16 acres of ground disturbance during construction and an approximately 9-acre increase in impervious surface on the installation (DAF 2023).
State and Local Actions		
Manhattan/Interbay Improvements	2024/2027–Future	These improvements include maintenance and construction associated with roadways adjacent to MacDill AFB (City of Tampa 2024).
Environmental Land Acquisition and Protection Program Storm Water Improvements – South Tampa	2022–Future	A series of stormwater improvement projects are planned for the South Tampa area to better deal with surface water runoff during the rainy season. This project includes infrastructure improvements and biological stormwater treatment in a created wetland system (City of Tampa 2024).
Wastewater Pump Station Rehabilitations	2025–Future	These rehabilitations would occur for several pump stations near MacDill AFB and would involve replacement of aging equipment to ensure continued reliability of the stations (City of Tampa 2024).

Key: DAF – Department of the Air Force; TECO – Tampa Electric Company; USSOCOM – United States Special Operations Command; MISO – Military Information Support Operations; LRS – Logistics Readiness Squadron; MOB 6 – Main Operating Base #6; NEPA – National Environmental Policy Act; FGUA – Florida Governmental Utility Authority; ERCIP – Energy Resilience and Conservation Investment Program; kV – kilovolt; SF – square foot; FY – fiscal year

3.2 Noise

3.2.1 Definition of Resource

Noise is any sound that is unwanted, loud, or unpleasant; interferes with communication; is intense enough to damage hearing; or is otherwise intrusive. How a person responds to noise varies depending on the type and characteristics of the noise. These characteristics include distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise is often generated by activities, such as construction or vehicular traffic, which are essential to a communities' quality of life. Any area where occupants are more susceptible to the adverse effects of noise are considered noise sensitive receptors. A noise sensitive receptor includes a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities include residential dwellings, hospitals, nursing homes, places of worship, educational facilities, and libraries. Sensitive receptors may also include noise sensitive cultural practices, some domestic animals, or certain wildlife species or broad areas such as nature preserves and designated districts in which occasional or persistent sensitivity to noise above ambient (background noise) levels exist in the environment. Ambient noise levels will vary depending on housing density and proximity to open space, major traffic areas, or airports.

Sound is a form of energy and varies by both intensity and frequency. Sound is produced when something vibrates sending waves of energy through the environment, also known as an acoustic wave. This energy displaces particles and creates a mechanical pressure. The sound pressure level is measured in decibels (dB) and is used to quantify sound intensity or loudness. Frequency, measured in Hertz (Hz), is the number of times per second an acoustic wave repeats itself and drives the sound's pitch. People can hear sound between 20 Hz and 20,000 Hz with increased sensitivity between 250 Hz to 5,000 Hz. Humans respond differently to changes in these frequencies they can hear and are less able to hear low frequencies versus high frequencies. Considering this varying sensitivity, the "A"-weighted decibel (dBA) scale, is used to approximate the relative loudness of sound based on human perception. Factors that influence human response to noise include intensity or loudness, duration that the sound is detected, frequency (or pitch) of the sound, repetition of the sound source, time of day the sound occurs, abruptness of onset or cessation of the sound, and successful application of noise control measures (DoD 2018). Distance from the noise source is also an important consideration because noise levels reduce by 6 dB with every doubling of distance from the source, and for a difference of 10 dBA, the noise level perceived by the human ear is either doubled or halved (OSHA 2018). Most people are exposed to daily sound levels of 50 to 55 dBA or higher. Common sounds encountered in daily life and through construction activities and their dBA levels 50 feet from the source are provided in **Table 3-2**.

Various sound level metrics have been developed for purposes of characterizing the sound environment. Day-night average sound level (DNL) is the average sound energy in a 24-hour period with a weighting added to the nighttime A-weighted sound levels. Due to the potential to be particularly intrusive, noise events occurring between 10:00 pm and 7:00 am are assessed a 10 dB weighting when calculating DNL. DNL is a useful descriptor for aircraft noise because: (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-

hour period. DNL provides a measure of the overall acoustical environment, but it does not represent the sound level at any given time.

Table 3-2. Common Sound Sources and Sound Levels

Common Sound Sources	Distance from Source	Sound Level (dBA)
Household/Outdoor		
Soft Whisper	5 feet	30
Refrigerator or Light Traffic	3 feet; 100 feet, respective	50
Garbage Disposal or Motorcycle	3 feet; 25 feet, respective	80
Lawn mower	3 feet	90
Car horn	3 feet	100
Ambulance Siren	100 feet	120
Jet Taking Off	200 feet	130
Clearing and Grading Machinery		
Concrete Mixer	50 feet	74–88
Paver	50 feet	86–88
Dozer/Tractor/Front Loader	50 feet	75–80
Construction Equipment		
Grader	50 feet	80–93
Truck	50 feet	83–94
Backhoe	50 feet	72–93
Pile Driver	50 feet	91–110

Sources: FAA 2022, CHC 2022, USEPA 1971, DoD 2018
Key: dBA – "A"-weighted decibel

Regulatory Review and Land Use Planning. The Noise Control Act of 1972 directs federal agencies to comply with applicable federal, state, and local noise control regulations. The Occupational Safety and Health Administration (OSHA), under the Noise Control Act, established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA, and exposure to this level must not exceed 15 minutes within an 8-hour period. Additionally, the standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that reduces sound levels to acceptable limits (OSHA 2008).

DoDI 4715.13, *DoD Operational Noise Program*, establishes policy, assigns responsibilities, and prescribes procedures for administering the DoD Operational Noise Program and managing military noise. The DoD developed the Air Installations Compatible Use Zones program for military airfields. The program goal is to promote compatible land use development around military airfields by providing information on aircraft noise exposure and accident potential. The DAF's land use guidelines for noise exposure are outlined in Air Force Handbook 32-7084, *Air Installations Compatible Use Zones Program Manager's Guide.*

3.2.2 Existing Conditions

The region of influence (ROI) for the analysis of effects on the noise environment comprises the installation and the adjacent off-installation area north of the installation boundary. The main source of noise on MacDill AFB is from aircraft noise. Other sources of noise include vehicle traffic; heating, ventilation, and air conditioning (HVAC) systems; military unit physical training; lawn maintenance; and construction activities.

Aircraft Activity. For DAF NEPA documents, DNL is the primary noise metric for aircraft noise. DNL is the average sound energy in a 24-hour period with a weighting added to the nighttime dBA sound levels. The 65-dBA DNL is the noise level below which all land uses are generally compatible with noise from aircraft operations. **Figure 3-1** shows the existing DNL contours plotted in 5 dB increments ranging from 65- to 85-dBA DNL. The noise contours depict 2021 operational conditions at MacDill AFB. **Table 3-3** provides a general overview of recommended noise limits from aircraft operations for land use planning purposes.

Table 3-3. Recommended Noise Limits for Land Use Planning

General Level of Noise	Percent Highly Annoyed	Aircraft Noise (DNL)	General Recommended Uses
Low	<12	<65 dBA	Noise-sensitive land uses acceptable
Moderate	12–36	65–75 dBA	Noise-sensitive land uses normally not recommended
High	>36	>75 dBA	Noise-sensitive land uses not recommended

Source: DAF 2017
Key: DNL – day-night average sound level; dBA – "A"-weighted decibel

Ground Activity. Ongoing noise from ground-based activity on the installation comes primarily from vehicular traffic, daily human activities, training exercises, and construction.

Noise Sensitive Receptors. Table 3-4 lists the on- and off-installation noise sensitive receptors that would be located near one or more of the proposed installation development projects. Proximity to the installation's existing operational DNL noise contours is noted, as applicable.

3.2.3 Environmental Consequences

Analysis of potential noise impacts is based on changes to the ambient noise environment or potential changes to land compatibility from noise caused by implementation of a proposed action. A proposed action would have significant impacts on noise if any of the following were to occur:

- violation of applicable federal or local noise regulations,
- creation of appreciable areas of incompatible land use outside the installation boundary,
- noise that would negatively affect the health of the community.

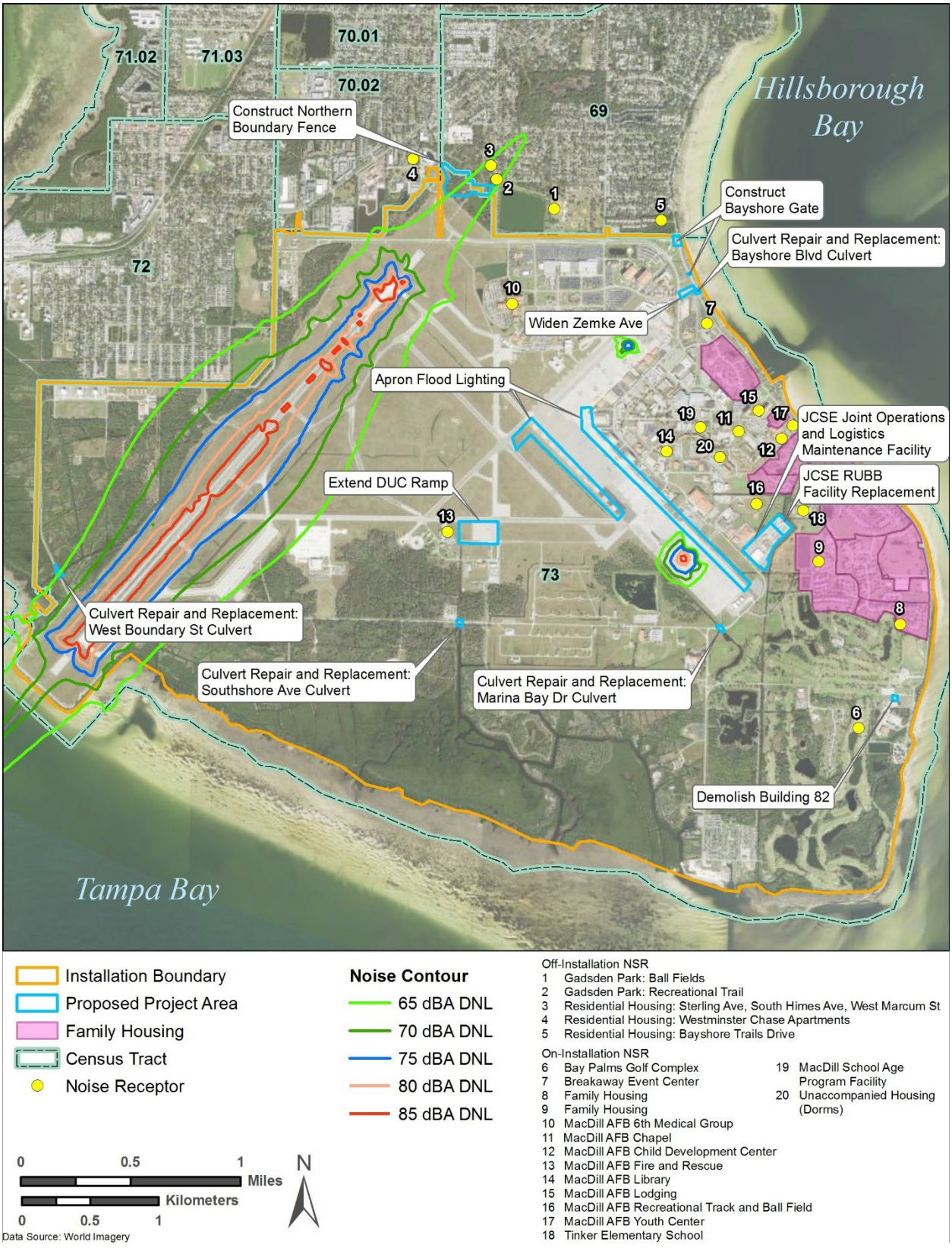

Figure 3-1. Location of Nearest Sensitive Receptors and Noise Contours

Table 3-4. Noise Sensitive Receptors and Locations Relative to the Proposed Action

Noise Sensitive Receptor	Location Details relative to Proposed Project Sites [1]
Off-Installation Receptors	
Gadsden Park: Ball Fields	Recreational ballpark located north, adjacent to North Boundary Boulevard, and west, adjacent to South MacDill Avenue, located approximately 1,400 feet east of the Northern Boundary Fence Project and approximately 1,900 feet west of the Bayshore Gate project
Gadsden Park: Recreational Trails	Nearest recreational trails are located approximately 50 feet east of the Northern Boundary Fence Project; this area underlies the installation's 65 dBA contour
Residential Housing: Sterling Avenue, South Himes Avenue, and West Marcum Street	Located east of and parallel to Highway 573; nearest houses on South Himes Avenue and West Marcum Street are located 170 feet north of the main gate northern boundary fence and Gadsden Park recreational trails. These residences underlie the 65 dBA contour; nearest houses at South Sterling Avenues are located 500 feet north and northwest of the main gate boundary fence
Residential Housing: Westminster Chase Apartments	Located west of Highway 573; located approximately 600 feet northwest of the main gate northern boundary fence
Residential Housing: Bayshore Trails Drive	Located west adjacent to Bayshore Drive and immediately north of Northern Boundary Boulevard; approximately 620 feet northwest of the Bayshore Gate; approximately 1,700 feet north of Zemke Avenue and the Bayshore Boulevard culvert
On-Installation Receptors	
MacDill AFB Library	Located approximately 820 feet west of the Apron Flood Lighting project
MacDill AFB Recreational Track and Ball Field	Located approximately the 300 feet west of the JCSE Compound; approximately 1,400 feet east of the Apron Flood Lighting project
Tinker K-8 School	Located approximately 300 feet northeast of the JCSE compound
MacDill School Age Program Facility	Located approximately 1,910 feet east of the Apron Flood Lighting project; approximately 2,080 feet north of the JCSE compound; approximately 3,150 feet southwest of Zemke Avenue and the Bayshore Boulevard culvert; approximately 3,750 feet southwest of the Bayshore Gate
MacDill AFB 6th Medical Group	Located approximately 1,675 feet south of the main gate and northern boundary fence
MacDill AFB Child Development Center	Located approximately 2,020 feet northeast of the JCSE compound; approximately 4,080 feet south of Zemke Avenue and the Bayshore Boulevard culvert; approximately 5,420 feet south of the Bayshore Gate
MacDill AFB Youth Center	Located approximately 2,210 feet northeast of the JCSE compound; approximately 4,220 feet south of Zemke Avenue and the Bayshore Boulevard Culvert; approximately 5,519 feet south of the Bayshore Gate
MacDill AFB Chapel	Located approximately 3,560 feet south of Zemke Avenue and the Bayshore Boulevard culvert; approximately 2,230 feet northeast of the JCSE compound

Noise Sensitive Receptor	Location Details relative to Proposed Project Sites [1]
Family Housing: Second Avenue, Tampa Point Boulevard, and Fortress Drive	Nearest family residences on Second Avenue located approximately 680 feet northeast of the JCSE compound; Nearest family residences on Tampa Point Boulevard located approximately 1,100 feet east of the JCSE compound; nearest family residences on Fortress Drive approximately 850 feet east of the JCSE compound; and approximately 5,010 feet east of the Marina Bay culvert; 1,700 feet north of Building 82
Unaccompanied Housing: Hillsborough Loop Drive and Cypress Stand Street	Nearest dormitories on Hillsborough Loop Drive located approximately 1,540 feet north of the JCSE compound; approximately 1,720 feet east of the Apron Flood Lighting project; approximately 3,320 feet southwest of Zemke Avenue and Bayshore Boulevard culvert; approximately 3,950 feet southwest of the Bayshore Gate
MacDill AFB Lodging	Located approximately 3,490 feet southeast of Zemke Avenue and the Bayshore Boulevard culvert; approximately 4,670 feet southeast of Bayshore Gate; approximately 2,700 feet northeast of the JCSE compound
MacDill AFB Fire and Rescue	Located approximately 480 feet west of the DUC ramp
Breakaway Event Center	Located approximately 900 feet south Zemke Ave and the Bayshore Boulevard culvert; approximately 2,500 feet south of Bayshore Gate
Bay Palms Golf Complex	Buildings within 250 feet and east golf course holes and 900 feet of Building 82; holes in the western portion of the golf course within 1,350 feet of the Marina Bay Drive culvert

Key: dBA – "A"-weighted decibel; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex
[1] Location details and distances estimated using Google Earth imagery and measurements.

This noise impacts analysis considers proximity to noise sensitive receptors, demolition and renovation activities and opportunities for abatement, and the location of each proposed development project relative to the existing operational DNL noise contours.

3.2.3.1 PROPOSED ACTION

Short-term, minor to moderate, adverse noise impacts would be expected due to the operation of heavy equipment and construction vehicles, increased construction-related traffic along the main routes to transport work crews and materials to the project sites, the proposed construction and demolition activities at each site, and from hauling debris to local landfills. The anticipated noise effects would not violate applicable noise regulations, create noise incompatible with land uses on or off the installation, or result in negatively affect public health. **Table 3-5** lists the highest estimated project-related noise levels that may be experienced at the nearest sensitive receptor location(s). Because these estimates conservatively assume concurrent operation of the same numbers and types of equipment, tools, and vehicles for every project, noise levels are over-estimated for projects affecting smaller areas or involving phased use of individual types of equipment or tools.

All construction and demolition activities would occur within the installation's boundary, where aircraft and other types of military operational noise are typical and all related noise impacts would cease upon project completion. Operation of construction vehicles to transport

equipment, materials, and debris to and from the installation would temporarily add to existing traffic noise and be anticipated on and off-installation. Noise controls would be used to the extent practicable to manage noise reduction. Noise reducing measures such as exhaust mufflers can reduce the noise level by as much as 10 dBA (USEPA 1971). It is expected that different types of construction equipment would be operated intermittently and for short durations at the various project sites.

Individuals working or recreating outside at locations near a proposed project area may notice or be bothered by the noise. The perceived loudness of construction activities would decrease with distance and if individuals are inside buildings, so that construction related noise may not be perceptible to some noise sensitive receptors. Anticipated noise levels at receptor locations were estimated per the *2018 OSHA Technical Manual* (OSHA 2018) and calculations conservatively assume a cumulative noise level (88.7 dB) for operation of equipment and construction activities at 50 feet per United States Environmental Protection Agency (USEPA)-reported dB levels (in USEPA 1971) for types of equipment that would be operated at the site(s). At receptor distances of 770 feet or greater from a proposed development action, noise levels would be less than 65 dB.

As shown in **Table 3-5**, noise generated during construction of the Widen Zemke Avenue, Apron Flood Lighting, and Culvert Repair and Replacements: Bayshore Boulevard, West Boundary Road, Marina Bay Drive, and Southshore Avenue projects would be within an acceptable dB range for noise sensitive land uses at MacDill AFB.

Table 3-5. Highest Estimated Project-Related Noise Levels at the Nearest Noise Sensitive Receptor Locations

Project Name and Number	Nearest Sensitive Receptor(s)	Distance (Feet)[1]	Highest Estimated Noise Level at the Receptor (dBA) [2]
Facility Construction Projects			
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704) and the JCSE RUBB Facility Replacement (NVZR180048)	Tinker K-8 School Building	300	73
	Tinker K-8 School Playground	780	65
	MacDill Recreational Park	300	73
	Family Housing (Second Avenue)	680	66
	Unaccompanied Housing (Dorms Hillsborough Loop Drive)	1,540	59
Construct Bayshore Gate (NVZR190031)	Residential Housing on Bayshore Trails Drive	620	67
Infrastructure Construction and Repair Projects			
Widen Zemke Avenue (NVZR180060) and the Culvert Repair and Replacements (Project Number): Bayshore Boulevard (NVZR# TBD)	Breakaway Event Center	900	64
Apron Flood Lighting (NVZR173710)	MacDill Library	900	64

Project Name and Number	Nearest Sensitive Receptor(s)	Distance (Feet)[1]	Highest Estimated Noise Level at the Receptor (dBA) [2]
	MacDill AFB Middle School Age Program Facility	1,910	57
Construct Northern Boundary Fence (NVZR190085)	Gadsden Park – Recreational Trails	48	89
	Residential Housing: South Himes Avenue and West Marcum Street (east of Highway 573)	170	78
	Residential Housing: Westminster Chase Apartments (west of Highway 573)	600	67
Extend DUC Ramp (NVR190077)	MacDill Fire and Rescue	200 feet [3]	77
Culvert Repair and Replacements (Project Number): Bayshore Boulevard (NVZR# TBD)	*See Widen Zemke Avenue Receptor Details*		
Culvert Repair and Replacements: West Boundary Road, Marina Bay Drive, and Southshore Avenue	No nearby noise sensitive receptors	N/A	N/A
Demolition Projects			
Demolish Building 82 (NVZR220042)	Bay Palms Golf Complex Buildings	250	75
	Bay Palms Golf Course, east holes	900	64
	Family Housing	1,700	58

Key: dBA – "A"-weighted decibel; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex; N/A – not applicable

[1] Noise Sensitive Receptor distances from project sites estimated using Google Earth measurement tools.

[2] Estimated noise levels calculated per the 2018 OSHA Technical Manual Section III: Chapter 5 – Noise. (OSHA 2018). Noise levels at the receptor locations assumed the cumulative noise level (88.7 dB) for construction activities at 50 feet per USEPA-reported (in USEPA 1971) dB levels for types of equipment that would be operated at the site(s). Calculation of the cumulative noise level conservatively assumed concurrent operation of the same numbers and types of equipment at every project site. Values rounded to the nearest whole number.

[3] Estimated nearest distance of construction required for the expanded DUC Ramp project.

Noise generated during activities for the JCSE Joint Operations and Logistics Maintenance Facility, JCSE RUBB Facility Replacement, Construct Bayshore Gate, Construct Northern Boundary Fence, Extend DUC Ramp, and Demolish Building 82 projects would adversely affect noise sensitive receptors at nearby recreational areas, residences, and an educational facility on MacDill AFB.

The nearest noise sensitive receptors to the Construct Northern Boundary Fence project are the recreational trails in the west portion of the Gadsden Park Recreational Trails, and residential housing at South Himes Avenue and West Marcum Street. These receptor locations are within

the existing 65 dBA aircraft noise contour which already experiences noise at that level from ongoing operations at the installation. Although the estimated cumulative noise levels for these projects range from around 67 to 89 dB, the loudest activities anticipated during construction of the northern boundary fence would involve equipment for tree removal, if required, to make a pathway for the chain link fence, and once complete, phased operation of individual vehicles and tools to transport fence material to the site and to install fencing along the boundary. Therefore, noise generated during construction for this project is expected to be far less than the projected range. Additionally, considering that construction would be conducted on business days during daylight hours (7:00 am to 5:00 pm), distances to nearest residential areas, and the anticipated noise controls to be implemented, sleep disturbance in residential areas from construction-related activities would not occur.

The southwestern corner of the Tinker K-8 School property encompasses a forested vegetation buffer. South-adjacent to that forested area is the walled JCSE compound. The presence of the wall and vegetation buffer creates an existing noise barrier that would reflect, refract, and/or absorb noise as it travels in the direction of Tinker K-8 School. The highest estimated outdoor noise level at the school (73 dBA) projected to occur at the southwestern corner of the school building does not consider noise attenuation from these buffers. Additionally, a 2018 study on sound dampening of outside noise levels resulting from highway traffic or construction activities by insulated building walls and windows reported a median reduction in the noise level experienced indoors by around 10 dBA when building windows were open; reduction by approximately 16 dBA when building windows were tilted; and reduction by around 28 dBA when the building windows were closed (Locher et al., 2018). Because classrooms would be buffered by the school's exterior walls, internal insulation, and interior walls, it is anticipated that experienced noise levels would be within acceptable levels for noise sensitive land uses on the installation. Anticipated short-term, intermittent construction-related noise levels would be experienced on the school playground (immediately north of the school approximately 770 feet northeast of the JCSE RUBB Facility Replacement project). Noise controls would be used to the extent practicable to manage noise reduction and short-term, moderate, adverse noise impacts would be expected.

No long-term noise impacts are expected from operation of the developed facilities and infrastructure post construction at any project location. **Section 3.4** discusses noise impacts on biological resources.

3.2.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing noise conditions described in **Section 3.2.2** would remain unchanged. Therefore, no impacts on the noise environment would be expected.

3.2.3.3 CUMULATIVE IMPACTS

If construction of any of the reasonably foreseeable actions identified in **Table 3-1** were to be implemented concurrently with construction of any of the Proposed Actions, impacts on the noise environment from heavy equipment use and construction traffic would be minor to moderate, but temporary and intermittent. The existing ambient noise levels or the types of

noise would not be expected to change under the Proposed Actions. Therefore, short-term, moderate, cumulative impacts would be expected from the Proposed Actions in combination with the reasonably foreseeable actions.

3.3 Air Quality

3.3.1 Definition of Resource

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the CAA, the six pollutants defining air quality, called "criteria pollutants," are carbon monoxide (CO), sulfur dioxide, nitrogen dioxide, ozone (O_3), suspended particulate matter (measured less than or equal to 10 microns in diameter [PM_{10}] and less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), and lead. CO, sulfur oxides (SO_X), nitrogen oxides (NO_X), lead, and some particulates are emitted directly into the atmosphere from emission sources. NO_X, O_3, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compound (VOC) and NO_X emissions are precursors of O_3 and are used to represent O_3 generation.

Under the CAA (42 USC Section 85 et seq.), USEPA has established National Ambient Air Quality Standards (NAAQS; 40 CFR 50) for criteria pollutants. Areas that are and have historically been in compliance with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that exceed an NAAQS are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas. Nonattainment and maintenance areas are required to adhere to a State Implementation Plan to reach attainment or ensure continued attainment. The USEPA General Conformity Rule applies to federal actions occurring in nonattainment and maintenance areas. The General Conformity Rule does not apply to federal actions occurring in attainment areas.

Global climate change refers to long-term fluctuations in temperature, precipitation, wind, sea level, and other elements of Earth's climate. Of particular interest, greenhouse gases (GHGs) are gas emissions that trap heat in the atmosphere. GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tropospheric O_3, and several fluorinated and chlorinated gaseous compounds. Most GHGs occur naturally in the atmosphere but increases in concentration result from human activities such as burning fossil fuels. CO_2, CH_4, and N_2O account for 99.5 percent of all GHG emissions in the United States, while the single most dominant GHG emitted is CO_2, accounting for 91.9 percent of all reported GHG emissions in the United States as of 2022 (USEPA 2023a). To estimate global warming potential, all GHGs are expressed relative to a reference gas, CO_2, which is assigned a global warming potential of one (1). All GHGs are multiplied by their global warming potential, and the results are added to calculate total equivalent emissions of CO_2 (CO_2e).

EO 13990, *Protecting the Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, signed 20 January 2021, reinstated the *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, issued 5 August 2016 by CEQ, that required federal agencies to consider GHG emissions and the effects of climate change in

NEPA reviews (CEQ 2016). EO 13990 required federal agencies to capture the full costs of GHG emissions as accurately as possible to facilitate sound decision-making, recognize the breadth of climate impacts, and support the international leadership of the United States on climate issues. The CEQ *National Environmental Policy Act Interim Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*, issued 9 January 2023, recommends determining the social cost of GHG emissions from a proposed action, where feasible, as a means of comparing the GHG impacts of the alternatives (CEQ 2023). Accordingly, estimated CO_2e emissions and social cost of GHGs associated with the Proposed Action are provided in this IDEA for informative purposes. The "social cost of GHGs" is an estimate of the monetized damages associated with incremental increases in GHG emissions, such as reduced agricultural productivity, human health effects, property damage from increased flood risk, and the value of ecosystem services.

EO 14008, *Tackling the Climate Crisis at Home and Abroad*, further strengthens EO 13990 by implementing objectives to reduce GHG emissions and bolster resilience to the impacts of climate change, and requiring federal agencies to develop and implement climate action plans. The DAF *Climate Action Plan* recognizes the Department's role in contributing to climate change and aims to address the challenges and risks posed by climate change through identifying climate priorities that include modernizing infrastructure and facilities, making climate-informed decisions, optimizing energy use, and pursuing alternative energy sources (DAF SAF/IE 2022). The DAF *Climate Campaign Plan* implements the *Climate Action Plan* by breaking down the strategies DAF implements to attain specific and measurable objectives in accordance with climate priorities (DAF SAF/IE 2023).

3.3.2 Existing Conditions

3.3.2.1 AIR QUALITY CONTROL REGION

MacDill AFB is within Hillsborough County, Florida, which is within the West Central Florida Intrastate Air Quality Control Region (40 CFR 81.96). USEPA Region 4 and FDEP regulate air quality in Florida. USEPA has designated two areas of Hillsborough County as maintenance for the 2010 sulfur dioxide (SO_2) NAAQS and one area of the county as maintenance for the 2008 lead NAAQS. MacDill AFB is between 0.3 and 22 miles outside of these maintenance areas (FDEP 2018a, 2018b, 2019). As such, the area of Hillsborough County containing MacDill AFB is in attainment for all criteria pollutants, and the General Conformity Rule is not applicable to federal actions that would occur within the boundary of the installation, including the proposed installation development projects. **Table 3-6** includes the most recent available Hillsborough County annual emissions inventory (calendar year [CY] 2020).

Table 3-6. CY 2020 Emissions Inventory for Hillsborough County

County	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)
Hillsborough	18,569	49,930	143,370	3,114	12,045	6,670	0.813

Source: USEPA 2023b

Key: NO_X – nitrogen oxides; tpy – tons per year; VOC – volatile organic compounds; CO – carbon monoxide; SO_X – sulfur oxides; PM_{10} – particulate matter measured less than or equal to 10 microns in diameter; $PM_{2.5}$ – particulate matter measured less than or equal to 2.5 microns in diameter

3.3.2.2 REGULATORY/PERMITTING OVERVIEW

MacDill AFB is considered a minor source for the purposes of air permitting and holds a minor source operating permit (Air Permit Number 0570141-031-AO) issued by the Hillsborough County Environmental Protection Commission. The installation does not emit nor has the potential to emit criteria pollutants in exceedance of any major source threshold (i.e., 100 tons per year [tpy] for each criteria pollutant) and therefore is not subject to the Title V Operating Permit Program under the CAA. The installation's minor source operating permit expires 19 May 2028 (EPC 2023). Permit requirements include a periodic inventory of all significant stationary sources of air emissions as well as monitoring and recordkeeping. Primary sources of air emissions are emergency internal combustion engines (i.e., emergency power generators) as well as multiple exempt sources such as natural gas-fired external combustion heating units, fuel storage tanks, parts washers, woodworking activities, painting, and enclosed blasting operations. **Table 3-7** lists MacDill AFB's facility-wide air emissions from all permitted stationary sources. Florida does not require permitting of mobile source emissions (e.g., aircraft and vehicle operations).

Table 3-7. CY 2022 Emissions Inventory for MacDill AFB

Source	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)
MacDill AFB Stationary Sources[1]	2.13	0.057	0.27	0.032	0.105	0.105	Not reported
MacDill AFB Potential to Emit[2]	24.14	3.90	6.61	0.23	2.47	2.30	Not reported

Sources: FDEP 2024a, MacDill AFB 2024a

Key: NO_X – nitrogen oxides; tpy – tons per year; VOC – volatile organic compounds; CO – carbon monoxide; SO_X – sulfur oxides; PM_{10} – particulate matter measured less than or equal to 10 microns in diameter; $PM_{2.5}$ – particulate matter measured less than or equal to 2.5 microns in diameter

[1] Represents the facility's actual emissions.

[2] Represents the maximum capacity of all the facility's stationary sources to emit according to their physical and operational design.

Permitted stationary sources of air emissions present at the installation include stationary emergency generators and emergency fire pump engines. Permitted air emissions sources at the project locations include a diesel-fired emergency generator at Building 861 within the JCSE Joint Operations and Logistics Maintenance Facility project area. There are no permitted air emissions sources within the remaining project areas. Mobile sources of air emissions at MacDill AFB include aircraft flight operations, maintenance equipment, and vehicles.

3.3.2.3 CLIMATE AND GREENHOUSE GASES

The west-central region of Florida that includes MacDill AFB experiences a typical tropical climate, with hot, humid summers and warm winters. Between 1991 and 2020, the Tampa Bay area has had an average temperature of 82.4 degrees Fahrenheit (°F) in the hottest month of August, with high temperatures that exceeded 90 °F, and an average temperature of 61.2 °F in the coldest month of January, with low temperatures that reached 50 °F. The average annual temperature was 73.1 °F. The annual average precipitation of the region was 53.59 inches. The wettest month of the year is August with an average rainfall of 8.79 inches (NOAA 2024).

Ongoing global climate change has contributed to rising seas and retreating shores; increased storm intensity, increased precipitation; decreased crop productivity; disruption of natural ecosystems; and human health effects in Florida. Effects from global climate change at MacDill AFB include sea level rise and increases in the frequency and intensity of hurricanes and tropical storms, which lead to intensified flooding. The DoD ranks MacDill AFB as among the most threatened installations by climate change in the United States. Coastal erosion, particularly on the east side of the installation, results from higher storm surges, recurrent flooding, and general sea level rise and tidal changes, which threatens roadways and other key infrastructure. To combat continued erosion of the installation's shoreline, MacDill AFB implements shoreline stabilization measures. In 2007, approximately 3 miles of the eastern shoreline at MacDill AFB were stabilized with a revetment constructed of limestone boulders. Other shoreline stabilization systems protect the other areas of MacDill AFB (MacDill AFB 2022c).

Global climate change also contributed to higher air temperatures at MacDill AFB, which can cause adverse health effects such as heat stroke and dehydration and can affect cardiovascular and nervous systems, especially in vulnerable populations (i.e., children, elderly, sick, low-income populations). Warmer air also can increase the formation of ground-level O_3, which has a variety of health effects, including aggravation of lung diseases and increased risk of death from heart or lung disease. MacDill AFB is considered at risk from future increases in extreme heat and is predicted to face more than five times more extreme heat days (days where temperatures exceed 100 °F) by the end of the century, which may affect training and operations (USEPA 2016; Hoffman et al. 2023; ASP 2021; Dahl et al. 2019a, 2019b).

In 2020, Hillsborough County produced approximately 16.2 million tons of CO_2e, while the state of Florida produced approximately 298.5 million tons of CO_2e (USEPA 2023b). Florida is ranked the third highest state producer of CO_2 in the United States (USEIA 2023). CO_2e emissions from stationary sources on MacDill AFB do not exceed the USEPA GHG Reporting program's reporting threshold of 25,000 tpy; therefore, MacDill AFB is not required to report annual CO_2e emissions to USEPA (USEPA 2023c).

3.3.3 Environmental Consequences

This air quality analysis estimates the effects on air quality and climate change that would result from the Proposed Action and the No Action Alternative. Effects on air quality are evaluated by comparing the annual net change in emissions for each criteria pollutant against applicable thresholds. Per the DAF Air Quality EIAP Guide, insignificance indicators are applied to emissions of pollutants designated as attainment or unclassified to provide an indication of the significance of potential impacts on air quality. The insignificance indicator is the 250 tpy Prevention of Significant Deterioration (PSD) major source threshold, as identified by USEPA, and is applied to emissions of all criteria pollutants, except lead, occurring in attainment/unclassified areas. The PSD insignificance indicator for lead is 25 tpy. The PSD thresholds do not denote a significant impact; however, they do provide a threshold to identify actions that have insignificant impacts on air quality. Any action with net criteria pollutant emissions below the insignificance indicators is considered so insignificant that the action will not cause or contribute to an exceedance of one or more NAAQS (AFCEC 2020).

Consistent with EO 14008, GHGs are analyzed as a category of air emissions. Impacts from GHG emissions are assessed on a global scale, as sources of GHGs worldwide contribute to climate change globally. The DAF applies the PSD threshold for GHG emissions of 75,000 tpy (68,039 metric tpy) of CO_2e as an insignificance indicator for impacts on global climate change. Any action with net GHG emissions below the insignificance indicator is considered too insignificant on a global scale to warrant any further analysis. The GHG emissions analysis includes a relative significance assessment to provide context for the Proposed Action's climate change impacts on a global, national, and regional scale. Per CEQ and DAF guidance, the climate change analysis includes social cost of GHG estimates and qualitatively assesses the Proposed Actions' impacts on potential future climate scenarios and whether elements of the Proposed Actions would be affected by climate change. This analysis does not attempt to measure the actual incremental impacts of GHG emissions from the Proposed Actions, as there is a lack of consensus on how to measure such impacts.

The DAF Air Conformity Applicability Model, version 5.0.23a, was used to estimate the annual air emissions from the installation development projects. The potential for air quality impacts was assessed in accordance with Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention*; the EIAP (32 CFR 989); and the General Conformity Rule (40 CFR 93 Subpart B). The Air Conformity Applicability Model reports with detailed emissions calculations are included in **Appendix D**.

3.3.3.1 PROPOSED ACTION

Proposed Action Emissions

Air emissions from construction activities for the installation development projects would result in short-term, minor, adverse impacts on air quality. Emissions of criteria pollutants and GHGs would be directly produced from operation of heavy construction equipment, demolition and construction of buildings and infrastructure, heavy-duty diesel vehicles hauling supplies and debris to and from the project locations, workers commuting daily to and from the project locations in their personal vehicles, and ground disturbance. All such emissions would be temporary in nature and produced only when construction activities are occurring.

Table 3-8 summarizes the estimated total net change in annual air emissions from construction activities associated with the installation development projects. A one-calendar year construction period was used for the analysis to equate a worse-case emissions scenario in which all activity for a single project would occur in the same year. When considering each individual project or the combination of projects that would occur in the same year, annual emissions would not exceed the PSD thresholds for any criteria pollutant or for CO_2e; therefore, construction activities under the Proposed Actions would not result in significant impacts on air quality.

Table 3-8. Estimated Net Annual Air Emissions from Construction for the Proposed Actions

Year	Project Name and Number	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2025	Widen Zemke Avenue (NVZR180060)	0.788	0.096	1.066	0.001	0.782	0.031	<0.001	157.4
2025	Construct Northern Boundary Fence (NVZR190085)	1.264	0.145	1.547	0.002	7.577	0.052	<0.001	239.1
2025	Culvert Repair and Replacement (NVZR# TBD)	0.643	0.075	0.893	0.001	0.172	0.025	<0.001	163.2
2025	Demolish Building 82 (NVZR220042)	0.862	0.101	1.118	0.002	0.607	0.034	<0.001	169.3
Total emissions for 2025		**3.558**	**0.417**	**4.623**	**0.007**	**9.139**	**0.143**	**<0.001**	**728.9**
2026	Construct Bayshore Gate (NVZR190031)	0.584	0.121	0.867	0.001	0.318	0.022	<0.001	152.1
2026	JCSE RUBB Facility Replacement (NVZR180048)	0.581	0.102	0.867	0.001	0.217	0.022	<0.001	150.8
Total Emissions for 2026		**1.165**	**0.223**	**1.733**	**0.003**	**0.534**	**0.044**	**<0.001**	**302.9**
2027	Extend DUC Ramp (NVR190077)	0.942	0.116	1.267	0.002	1.236	0.038	<0.001	203.1
Total Emissions for 2027		**0.942**	**0.116**	**1.267**	**0.002**	**1.236**	**0.038**	**<0.001**	**203.1**
2028	Apron Flood Lighting (NVZR173710)	0.482	0.063	0.818	0.001	1.209	0.014	<0.001	114.0
Total Emissions for 2028		**0.482**	**0.063**	**0.818**	**0.001**	**1.209**	**0.014**	**<0.001**	**114.0**
2029	JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	1.369	1.691	1.895	0.003	5.854	0.036	<0.001	473.1
Total Emissions for 2029		**1.369**	**1.691**	**1.895**	**0.003**	**5.854**	**0.036**	**<0.001**	**473.1**
Annual Maximum		**3.558**	**1.691**	**4.623**	**0.007**	**9.139**	**0.143**	**<0.001**	**728.9**
PSD Threshold		**250**	**250**	**250**	**250**	**250**	**250**	**25**	**75,000**
Exceeds Threshold?		**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Key: NO_X – nitrogen oxides; tpy – tons per year; VOC – volatile organic compounds; CO – carbon monoxide; SO_X – sulfur oxides; PM_{10} – particulate matter measured less than or equal to 10 microns in diameter; $PM_{2.5}$ – particulate matter measured less than or equal to 2.5 microns in diameter; CO_2e – carbon dioxide equivalent ; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex; PSD – Prevention of Significant Deterioration

Many criteria pollutants are produced from internal combustion engines such as those found in gas-powered equipment and generators. Particulate matter, such as fugitive dust, is produced from earth-moving activities, demolition, and vehicles and equipment traveling over paved and unpaved roads. Construction activities would incorporate BMPs and environmental control measures (e.g., wetting the ground surface, using diesel particulate filters in vehicles and equipment) to minimize fugitive dust and other criteria pollutant emissions. Implementation of BMPs and environmental control measures could reduce particulate matter emissions from a construction site by approximately 50 percent (USEPA 1985).

Air emissions from operation of new facilities would result in long-term, negligible, adverse impacts on air quality. The new Bayshore Gatehouse and JCSE RUBB and JCSE Joint Operations and Logistics Maintenance facilities would add building space to MacDill AFB requiring permanent heating/cooling systems, while the demolition of Building 82, the existing Bayshore Gatehouse, and Buildings 848, 860, 861, 886, and 887, would remove building space and reduce the requirements for heating/cooling. In addition, two generators at Building 861 would be removed following demolition and a new generator would be added to the new JCSE Joint Operations and Logistics Maintenance facility. **Table 3-9** provides the estimated total net change in operational emissions from the Proposed Actions. The net increase in operational air emissions at MacDill AFB from the Proposed Actions would be less than 0.11 tpy for each criteria pollutant and less than 140 tpy for CO_2e. The annual net change of emissions from operations would not exceed the PSD thresholds. Therefore, adverse impacts on air quality from operations would not be significant.

The net change in air emissions from stationary sources (i.e., heating systems) would not increase the installation's potential to emit above major source thresholds. Therefore, the Proposed Actions would not result in a permitting classification for MacDill AFB to major source status. New heating units would be considered exempt sources of air emissions per Rules 62-210.300(3)(a)35 and 62-210.300(3)(b)1 Florida Administrative Code (FAC) and would not be subject to the permitting requirements of the installation's minor source operating permit. The new generator at the JCSE Joint Operations and Logistics Maintenance facility would be added to the installation's operating permit. Because the installation's potential to emit considers both permitted and exempt stationary sources, the potential to emit listed in the minor source operating permit would be adjusted accordingly. In addition, net annual CO_2e emissions from the Proposed Action, when combined with existing CO_2e emissions at MacDill AFB, would not likely exceed the USEPA's annual 25,000 metric tpy reporting threshold; therefore, MacDill AFB would continue to be exempt from reporting annual CO_2e emissions to USEPA.

Climate and Greenhouse Gases

As shown in **Table 3-8**, construction for all installation development projects would produce an estimated 1,822 tons (1,653 metric tons) of CO_2e, representing less than 0.005 percent of annual CO_2e emissions in Hillsborough County and less than 0.0003 percent of annual CO_2e emissions in Florida (USEPA 2023b). Operational activities under the Proposed Action would result in a net increase of CO_2e emissions by approximately 140 tons (127 metric tons) per year, which represents less than 0.001 percent of annual CO_2e emissions in Hillsborough County and less than 0.0001 percent of annual CO_2e emissions in Florida (USEPA 2023b). As such, air emissions produced from construction and operations would not meaningfully contribute to the potential effects of global climate change and would not considerably increase the total CO_2e emissions produced in the region. Therefore, construction would result in short-term, negligible, adverse impacts from GHGs.

Table 3-9. Estimated Net Annual Operational Air Emissions from the Proposed Actions

Project Name and Number	Operation[1,2]	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
Demolish Building 82 (NVZR220042)	Remove Heating – Building 82	-0.018	-0.001	-0.015	<0.001	-0.001	-0.001	<0.001	-21.6
Bayshore Gate (NVZR190031)	Add Heating – New Gatehouse	0.020	0.001	0.017	<0.001	0.002	0.002	<0.001	23.9
Bayshore Gate (NVZR190031)	Remove Heating – Existing Gatehouse	-0.002	<0.001	-0.001	<0.001	<0.001	<0.001	<0.001	-2.7
JCSE RUBB Facility Replacement (NVZR180048)	Add Heating – New Facility	0.013	0.001	0.011	<0.001	0.001	0.001	<0.001	15.1
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	Add Heating – New Facility	0.678	0.037	0.570	0.004	0.052	0.052	<0.001	814.8
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	Remove Heating – Buildings 848, 860, 861, 886, and 887	-0.574	-0.032	-0.482	-0.003	-0.044	-0.044	<0.001	-689.7
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	Remove Emergency Generators – Building 861	-0.042	-0.010	-0.028	-0.009	-0.009	-0.009	<0.001	-4.8
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	Add Emergency Generator – New Facility	0.034	0.008	0.022	0.007	0.007	0.007	<0.001	3.9
	Net Annual Emissions **PSD Threshold** **Exceeds Threshold?**	**0.108** **250** **No**	**0.004** **250** **No**	**0.093** **250** **No**	**-0.001** **250** **No**	**0.007** **250** **No**	**0.007** **250** **No**	**<0.001** **25** **No**	**138.9** **75,000** **No**

Key: NO_X – nitrogen oxides; tpy – tons per year; VOC – volatile organic compounds; CO – carbon monoxide; SO_X – sulfur oxides; PM_{10} – particulate matter measured less than or equal to 10 microns in diameter; $PM_{2.5}$ – particulate matter measured less than or equal to 2.5 microns in diameter; CO_2e – carbon dioxide equivalent; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex; PSD – Prevention of Significant Deterioration

[1] Operations for heating systems based on 600 annual operating hours, per U.S. average heating load hours by region found in Vol. 80, No. 47 Federal Register, 12876, March 11, 2015.

[2] Operation assumed to start in January of the year following a project's construction year (e.g., operation of the JCSE RUBB Facility would begin in January 2027).

Table 3-10 shows the estimated annual GHG emissions from the Proposed Actions by year from both construction and operations. For the purposes of the analysis, the construction period for all installation development projects was assumed to occur from 2025 through 2029. Operations were assumed to begin in 2026.

Table 3-10. Estimated Net Annual GHG Emissions from the Proposed Actions

Year	CO_2 (tpy)	CH_4 (tpy)	N_2O (tpy)	CO_2e (tpy)	PSD Threshold	Exceeds Threshold?
2025 (Construction)	725.839	0.029	0.008	728.628	75,000	No
2026 (Construction and Operations)	279.951	0.012	0.003	281.089	75,000	No
2027 (Construction and Operations)	216.928	0.008	0.002	218.258	75,000	No
2028 (Construction and Operations)	128.263	0.005	0.001	128.970	75,000	No
2029 (Construction and Operations)	479.772	0.015	0.026	487.221	75,000	No
2030 and Later (Operations)	138.856	0.003	0.003	138.891	75,000	No

Key: CO_2 – carbon dioxide; tpy – tons per year; CH_4 – methane; N_2O – nitrous oxides; CO_2e – carbon dioxide equivalent; PSD – Prevention of Significant Deterioration

As shown in **Table 3-10**, the annual net change of GHG emissions from construction and operation of the installation development projects would not exceed the 75,000 tpy PSD threshold for CO_2e. Therefore, net GHG emissions are considered insignificant on a global scale and would not result in significant impacts on global climate change. To provide real-world context of the GHG and climate change impacts on a national, state, and regional scale, **Table 3-11** provides a relative comparison of the Proposed Actions' net GHG emissions versus United States, state, and county project emissions for the same time period. From a global context, the Proposed Actions' GHG emissions would represent 0.000001 percent of global GHG emissions.

The estimated social cost of GHGs from construction for all installation development projects would be approximately $96,111. The estimated social costs of GHGs from the first year of full operation would be approximately $7,860. **Table 3-12** summarizes the annual social cost of GHGs from the Proposed Actions.

Table 3-11. Relative Significance of the Proposed Actions' Estimated Net GHG Emissions

Reference Scale	CO_2 (tons)	CH_4 (tons)	N_2O (tons)	CO_2e (tons)	Comparison to Reference Scale
Proposed Actions	1,969.61	0.071	0.043	1,983.057	N/A
Hillsborough County	95,616,000	40,746	1,518	97,087,014	0.002045%
Florida	1,504,023,863	3,653,685	383,928	1,709,776,618	0.000116%
United States	33,971,819,655	169,492,962	9,925,482	41,166,937,226	0.000005%

Sources: USEPA 2023b, NOAA 2022

Key: CO_2 – carbon dioxide; CH_4 – methane; N_2O – nitrous oxide; CO_2e – carbon dioxide equivalent; N/A = not applicable

[1] For the purposes of this table, the time period considered for the Proposed Action includes construction years and 1 year of full operation (i.e., 2025 through 2030).

[2] Annual GHG emissions for each reference area were assumed to be consistent across all years considered.

Table 3-12. Theoretical Social Cost of GHGs for the Proposed Action (in 2020 dollars)[1,2,3]

Year[4,5]	Social Cost-CO_2	Social Cost-CH_4	Social Cost-N_2O	Social Cost-GHGs
2025	$36,870	$40	$150	$37,070
2026	$14,480	$20	$60	$14,550
2027	$11,610	$10	$40	$11,670
2028	$6,980	$10	$30	$7,020
2029	$26,550	$30	$510	$27,090
2030[6]	$7,810	$0	$50	$7,860

Source: IWG-SCGHG 2021

Key: CO_2 – carbon dioxide; CH_4 – methane; N_2O – nitrous oxide; GHGs – greenhouse gases

[1] All values are rounded to the nearest 10 dollars.

[2] Social Cost of GHG report is included in **Appendix D**.

[3] Social costs were calculated using a 3 percent average discount rate in 2020 dollars.

[4] For construction calculations, the year in which the project would occur was used to calculate the social cost of GHGs.

[5] Operational CO_2e emissions are annual emissions and would not occur until the facility becomes operational, which typically occurs after construction is complete. For operations calculations, the year following the year in which project construction would occur was used to calculate the social cost of GHGs.

[6] The 2030 social cost shown represents the additive social cost from the first year of full operations for all installation development projects. Social cost for subsequent years would be higher than what is shown, as social cost of GHGs increases over time.

Ongoing changes to climate patterns in Florida are described in **Section 3.3.2.3**. These climate changes are unlikely to affect DAF's ability to implement the Proposed Action. All installation development projects would occur within areas of MacDill AFB that have been previously disturbed; therefore, decreased crop productivity and disruption of natural ecosystems would not affect the Proposed Actions. The climate stressors with the greatest potential to affect the Proposed Actions are rising seas and retreating shores, increased storm intensity, and increased precipitation, which can lead to coastal erosion. Most of the installation development project areas are inland from Hillsborough and Tampa Bays; however, the Bayshore Gate location is adjacent to the eastern boundary of the installation and the shoreline of Hillsborough Bay. The Bayshore Gatehouse would be reconstructed on the west side of the existing canopy, which would nearly double its distance from the shoreline. The new gatehouse and grab net vehicle barrier system would be installed on the west side of Bayshore Boulevard, where Bayshore Boulevard, in addition to existing shoreline stabilization systems, would protect the structures from potential future coastal erosion that may result from continued global climate change. Other infrastructure related to the Bayshore Gatehouse project, including the canopy and guard booths, would remain in place; therefore, their vulnerability to climate stressors would not be affected.

Enhanced energy efficiency from replacement of outdated buildings, lower GHG-emitting technology used in modern building systems, reduced embodied carbon in modern construction materials, and other sustainable building practices could result in lower energy demand when compared to existing conditions, and indirectly reduce Florida's fuel burn requirements for energy production.

The Proposed Actions are only indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). At this time, no future climate scenario or potential future climate stressor would have significant effects on any element of the Proposed Actions, nor would the Proposed Actions meaningfully contribute to the occurrence of such events.

3.3.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions discussed in **Section 3.3.2** would remain unchanged. Therefore, no impacts on air quality would be expected.

3.3.3.3 CUMULATIVE IMPACTS

The Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on air quality from construction and operations. Construction of the reasonably foreseeable actions identified in **Table 3-1** that coincide with the construction periods of the installation development projects, may contribute additional and concurrent emissions of criteria pollutants and GHGs. Emissions from construction of reasonably foreseeable actions, when combined with emissions from the Proposed Actions, would be greater than what was analyzed for the Proposed Actions alone, resulting in short-term, minor, adverse, cumulative impacts. All such occurrences would be temporary in nature and cease upon completion of such construction activities. The General Conformity Rule is applied only to individual federal projects; therefore, the additive (i.e., combined) emissions of criteria pollutants from the Proposed Actions and the reasonably foreseeable federal actions would not be subject to a general conformity determination. Because emissions from the Proposed Actions would not be considered significant for the region, cumulative impacts on air quality from the Proposed Actions, when combined with other reasonably foreseeable actions, would not be significant.

Long-term, negligible, adverse, cumulative impacts could occur from operations under the reasonably foreseeable actions (i.e., net increases in operational emissions from construction of new and expanded facilities) when combined with operations under the Proposed Actions. Emissions from the Proposed Actions would not be considered significant for the region; therefore, cumulative impacts on air quality from the Proposed Actions, when combined with the other reasonably foreseeable actions, would not be significant. Many of the reasonably foreseeable actions, such as the relocation of overhead electrical distribution lines to underground and pipeline replacement, would increase the installation's resiliency to the effects of climate change, including increased storm intensity. Although construction activities contribute to net increases in annual criteria pollutant and GHG emissions, incorporation of practices for enhanced energy efficiency for new and expanded facilities may reduce energy requirements and associated emissions on a long-term scale, resulting in beneficial cumulative impacts.

3.4 Biological Resources

3.4.1 Definition of Resource

Biological resources include native or naturalized flora and fauna and the habitats (e.g., grasslands, forests, and wetlands) in which they exist. Protected and sensitive biological resources include species listed as threatened, endangered, or proposed under the ESA as designated by USFWS; migratory birds; bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*); and species that are protected by laws or programs of states. Sensitive habitats include areas designated by USFWS as critical habitat protected under the ESA and sensitive ecological areas designated by other federal or state regulations. Sensitive habitats also include wetlands (discussed in **Section 3.5**), plant communities that are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

Protected Species. The ESA (16 USC Section 1531 et seq.) establishes a federal program to protect and recover imperiled species and the ecosystems upon which they depend. The ESA requires federal agencies, in consultation with USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. Under the ESA, "jeopardy" occurs when an action is reasonably expected, directly or indirectly, to diminish the number, reproduction, or distribution of a species so that the likelihood of survival and recovery in the wild is appreciably reduced. An "endangered species" is defined by the ESA as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined by the ESA as any species likely to become an endangered species in the foreseeable future. The ESA also prohibits any action that causes a "take" of any listed species. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." Federal species of concern are not protected by law; however, these species could become listed and, therefore, are given consideration when addressing impacts from a proposed action. Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal land. USFWS has primary responsibility for terrestrial and freshwater organisms protected under the ESA.

Under the ESA, critical habitat is designated if USFWS determines that the habitat is essential to the conservation of a federally threatened or endangered species. In consultation for those species with critical habitat, federal agencies must ensure that their activities do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery.

In Florida, the Florida Fish and Wildlife Conservation Commission (FWC) oversees the protection and management of state-protected fauna under the Florida Endangered and Threatened Species Act (Florida Statute 372.072). Within the FAC, protection is provided to endangered and threatened species (68A-27.003 FAC) and species of special concern (68A-27.005 FAC). The Florida Department of Agriculture and Consumer Services maintains the state list of plants designated as endangered, threatened, and commercially exploited (5B-40 FAC) as defined under Florida Statute 581.185(2).

Migratory Bird Treaty Act. The MBTA was enacted to protect migratory birds and their parts (i.e., eggs, nest, and feathers). Migratory birds are protected under the MBTA of 1918 (16 USC Sections 703–712) as amended, and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. A Memorandum of Understanding was executed in September 2014, and extended in May 2022 until both parties deem a revised Memorandum of Understanding is required, between the DoD and USFWS to promote the conservation of migratory birds. Section 315 of the Authorization Act for Fiscal Year 2003 (Public Law 107-314, 116 Statute 2458) exempts military readiness activities carried out in accordance with 50 CFR 21.15 from the prohibition against the incidental taking of migratory birds. Military readiness activities, as defined in the Authorization Act and implementing regulations at 50 CFR 21.3, include all training and operations of the Armed Forces that relate to combat, and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

EO 13186 requires federal agencies to avoid or minimize impacts on migratory birds listed in 50 CFR 10.13, *List of Migratory Birds*. If design and implementation of a federal action cannot avoid measurable adverse impacts on migratory birds, EO 13186 requires the responsible agency to consult with the USFWS.

Bald and Golden Eagle Protection Act. Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 USC Sections 668–668c), as amended in 1962. The BGEPA prohibits the take, possession, or transport of bald eagles; golden eagles; and the parts (e.g., feathers, body parts), nests, and eggs without authorization from the USFWS. This includes inactive and active nests. “Take,” according to the BGEPA means to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb. Activities that directly or indirectly lead to a “take” are prohibited without a permit from the USFWS.

3.4.2 Existing Conditions

The ROI for the analysis of effects on biological resources includes the project area, and associated facilities and infrastructure projects (see **Figure 2-1**) to account for potential disturbances and impacts to species from the proposed facility construction, infrastructure construction and repair, and demolition projects.

3.4.2.1 VEGETATION

MacDill AFB predominant vegetation communities and land cover types include 33 vegetation alliances/communities based on the United States (U.S.) National Vegetation Classification Version 2.03 (see **Figure 3-2**). The main vegetation covers include tidal shrub salt marsh, mangrove forests, oak-dominated forests, and pine flatwoods. The remainder of the MacDill AFB acreage, approximately 3,751 acres (62.9 percent), is considered developed, lawn grass, or open water (MacDill AFB 2022c). The project areas are prominently improved and semi-improved areas; however, **Table 3-13** provides the surrounding predominant vegetation classifications to include potential areas of disturbance that may not be confined to improved or semi-improved areas. Vegetation within the airfield is maintained, and the grass is kept between 7 and 14 inches in accordance with the Bird/Aircraft Strike Hazard Plan, which implements both

DAFI 91-202*, US Air Force Mishap Prevention Program;* and DAFI *91-212, Bird/Wildlife Aircraft Strike Hazard Management Program* (MacDill AFB 2019b).

3.4.2.2 WILDLIFE

MacDill AFB is mostly urban with small tracts of wildlands, which limits its use by animals that require large home ranges. Native wildlife habitat quality has been degraded because of historic fire protection measures and non-native plant invasion. According to the 1992 *MacDill Air Force Base Wildlife Survey*, six wildlife habitat types are present on the installation: (1) paved runways and taxiways, and mowed lawn areas; (2) slash pine plantations; (3) pine flatwoods; (4) mixed pine and oak woodlands; (5) creeks, bays, and lagoons, and dredged channels; and (6) mangroves and high marsh (MacDill AFB 2022c).

The habitat within the improved, semi-improved, grasslands, marsh, and waterbody areas within or adjacent to the project areas provide limited food and cover for commonly occurring animals such as gray squirrels (*Sciurus carolinensis*), marsh rabbits (*Sylvilagus palustris*), armadillos (*Dasypus novemcinctus*), raccoons (*Procyon lotor*), and opossums (*Didelphis virginiana*) (MacDill AFB 2022c).

Table 3-13. Predominant Vegetation Classifications by Project

Project Name and Number	Predominant Vegetation
JCSE Joint Operations and Logistics Maintenance Facility (NVZR193704)	Warm-Season Open Lawn Canadian Horseweed Eastern Ruderal Grassland
Construct Bayshore Gate (NVZR190031)	Warm-Season Open Lawn Canadian Horseweed Eastern Ruderal Grassland
JCSE RUBB Facility Replacement (NVZR180048)	Warm-Season Open Lawn Water
Widen Zemke Avenue (NVZR180060)	Warm-Season Open Lawn Water
Apron Flood Lighting (NVZR173710)	Warm-Season Open Lawn
Construct Northern Boundary Fence (NVZR190085)	Warm-Season Open Lawn Southern Cattail Gulf Coastal Plain March Smooth Cordgrass Low Salt Marsh Water
Extend DUC Ramp (NVR190077)	Warm-Season Open Lawn
Culvert Repair and Replacement (NVZR# TBD)	Warm-Season Open Lawn Water
Demolish Building 82 (NVZR220042)	Warm-Season Open Lawn Water

Key: JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex

Figure 3-2. MacDill AFB Vegetation

3.4.2.3 SPECIAL STATUS SPECIES

Special status species include federally listed species protected under the ESA or Marine Mammal Protection Act (MMPA), federal candidate species, federal proposed species, federal species under review, state-listed species, BGEPA species, MBTA-protected species that occur on or near the installation. The list of special status species was developed based on data provided in the MacDill AFB Integrated Natural Resources Management Plan, 2019 threatened and endangered species surveys, the USFWS Information for Planning and Consultation report generated for the installation, the USFWS MBTA list, and information obtained from the FWC and Florida Department of Agriculture and Consumer Services (MacDill AFB 2019c, 2022c; USFWS 2023a, 2024a; FWC 2023; FDACS 2024).

All bird species occurring on MacDill AFB are protected under the MBTA and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, except for nonnative species (i.e., rock pigeon [*Columba livia*], European starling [*Sturnus vulgaris*], and house sparrow [*Passer domesticus*]). Florida state imperiled species are designated as federally endangered, federally threatened, or state designated (FWC 2023).

Of the 67 special status species with the potential to occur at MacDill AFB (see **Table 3-14**), 27 species have been documented on MacDill AFB. Species documented include:

- 7 federal species listed as threatened: American alligator (*Alligator mississippiensis*), loggerhead sea turtle (*Caretta caretta*), piping plover (*Charadrius melodus*), rufa red knot (*Calidris canutus rufa*), west Indian manatee (*Trichechus manatus*) (also MMPA-protected), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), and the wood stork (*Mycteria americana*);
- 13 state-listed threatened species: American kestrel (*Falco sparverius paulus*), American oystercatcher (*Haematopus palliatus*), black skimmer (*Rynchops niger*), Florida burrowing owl (*Athene cunicularia floridana*), Florida sandhill crane (*Grus canadensis pratensis*), gopher frog (*Lithobates capito*) (also under review for federal protections), gopher tortoise (*Gopherus polyphemus*), least tern (*Sternula antillarum*), little blue heron (*Egretta caerulea*), piping plover (*Charadrius melodus*), reddish egret (*Egretta rufescents*), roseate spoonbill (*Platalea ajaja*), and tricolored heron (*Egretta tricolor*);
- 1 BGEPA and MBTA-protected species: the bald eagle (*Haliaeetus leucocephalus*);
- 3 MBTA-protected species: white ibis (*Eudocimus albus*), snowy egret (*Egretta thula*), and brown pelican (*Pelecanus occidentalis*);
- 3 species pending federal protections: the proposed endangered tricolored bat (*Perimyotis subflavus*), candidate monarch butterfly (*Danaus plexippus*), and the eastern diamondback rattlesnake (*Crotalus adamanteus*) which is under review (MacDill AFB 2019c, 2022c; USFWS 2023a, 2024a; FWC 2023; FDACS 2024).

There are also 41 federally or state-protected species listed in **Table 3-14** that have not been documented on MacDill AFB but have the potential to occur on the installation (MacDill AFB 2019c, 2022c; USFWS 2024a).

Most of the protected bird species are associated with shoreline areas and the mangrove community (see Habitat Notes in **Table 3-14**); there is shorebird habitat directly to the east of the Construct Bayshore Gate, Culvert Repair and Replacement: Bayshore Boulevard, and

Widen Zemke Avenue projects. Additionally, it is likely there could be birds associated with the wetlands and waterbodies near the Construct Northern Boundary Fence, Culvert Repair and Replacement: West Boundary Street, Southshore Avenue, and Marina Bay; JCSE Joint Operations and Logistics Maintenance Facility; and the JCSE RUBB Facility Replacement projects. There have been approximately 30 wood stork sightings throughout MacDill AFB, predominantly within the eastern portion of the installation; however, no wood stork nesting colonies have been documented on the installation (MacDill AFB 2024b). Two rufa red knot, and two piping plover, and one eastern black rail observations have been documented around water bodies; none of the observations have occurred near proposed projects. There have been five bald eagle nests documented on the installation (see **Figure 3-3**); three nests have been documented as active, and none would be located immediately near any of the proposed projects. In August of 2023, there was an incident involving an eagle that got caught on top of one of the flight line light poles, necessitating euthanasia. In response, MacDill AFB is committed to putting deterrents on light poles to prevent this from happening in the future (USFWS 2023b). MacDill AFB maintains a bald eagle Depredation Permit for the BASH program issued on 1 July 2021 and a Depredation at Airports Permit issued on 1 April 2024 (USFWS 2021, 2024b). There is also widely distributed, sparse, non-native milkweed that occurs on the installation. The monarch butterfly, which prefers milkweed habitat, has been documented via incidental observations.

A 2002 to 2006 survey documented numerous telemetry points for the west Indian manatee around MacDill AFB. This species is frequently spotted by Marine Patrol in the marina, and the installation generally assumes the manatee can be present in the marina and large canals (MacDill AFB 2024b).

The following species could occur in burrows adjacent to the Apron Flood Lighting, Construct Northern Boundary Fence, and Extend DUC Ramp projects: Florida burrowing owl, eastern indigo snake, gopher tortoise, gopher frog, Florida pine snake, and short-tailed snake. Only the Florida burrowing owl, eastern indigo snake, gopher tortoise, and gopher frog have been documented on the installation.

The tricolored bat was documented acoustically during 2019 surveys using the USFWS range-wide Indiana bat survey guidelines methodology. A total of 51 detector-nights using eight full-spectrum Anabat Swift detectors were accomplished at MacDill AFB. Call files were scrubbed and analyzed using two programs, Kaleidoscope and Sonobat with preliminary analysis identifying calls from nine bat species totaling 107 Kaleidoscope and 21 Sonobat occurrences of the tricolored bat (TTU 2019). There is tricolored bat habitat scattered throughout MacDill AFB, including around the wooded edges surrounding the Culvert Repair and Replacement: West Boundary Street and Southshore Avenue, Construct Northern Boundary Fence, Construct Bayshore Gate, and Demolish Building 82 project areas. However, tricolored bats have been known to roost in buildings, culverts, and trees (UF 2017) and it is likely that foraging bats range all over the installation; therefore, tricolored bats could be present or use any of the project areas. No tricolored bat roosts or maternity colonies have been documented on the installation (MacDill AFB 2022c).

Table 3-14. Special Status Species that Potentially Occur on MacDill AFB

Species	Status	Distribution	Habitat	Documented on MacDill?
Mammals				
Tricolored bat (*Perimyotis subflavus*)	PE	Throughout Florida, except the Keys	Prefers partially open landscapes with large trees and woodland edges	Yes
West Indian manatee (*Trichechus manatus*)	FT/ MMPA	The coastal waters of the southern Atlantic Ocean	Found in Tampa Bay and tributaries	Yes
Birds				
American kestrel (*Falco sparverius paulus*)	ST/ MBTA	Throughout Florida	Prefers open stands of mature pines	Yes
American Oystercatcher (*Haematopus palliatus*)	ST/ MBTA	Mostly along the eastern and western coastal edges	Prefers coastal shorelines, sandbars, and tidal flats	Yes
Audubon's crested caracara (*Caracara plancus audubonii*)	FT/ MBTA	Southcentral Florida	Prefers wet prairies with cabbage palms, may also be found in wooded areas	No
Bald eagle (*Haliaeetus leucocephalus*)	BGEPA/ MBTA	Throughout Florida	Potential for foraging and nesting on the installation	Yes
Black scoter (*Melanitta americana*)	MBTA	Along the eastern and western coastal edges	Seacoasts, bays, and along exposed coastlines	No
Black skimmer (*Rynchops niger*)	ST/ MBTA	Along the coastal edges of Florida	Prefers open sandy beaches	Yes
Brown pelican (*Pelecanus occidentalis*)	MBTA	Along the eastern and western coastal edges	Found at beaches, docks, sandbars, estuaries, docks, mangrove islands, inlets, and sand spits	Yes
Chimney swift (*Chaetura pelagica*)	MBTA	Throughout Florida	Likely preferred nesting in caves and hollow trees; currently uses chimneys as their preferred nesting site. Need a vertical surface for nesting	No
Common loon (*Gavia immer*)	MBTA	Throughout Florida	Prefers lakes surrounded by forests	No
Eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*)	FT/ MBTA	Along the western and eastern coasts of Florida	Inhabits impounded and unimpounded salt and brackish marshes	Yes
Everglade snail kite (*Rostrhamus scoialbilis plumbeus*)	FE/ MBTA	Southern half of Florida panhandle	Found in shallow freshwater marshes and lake grassy.	No
Florida burrowing owl (*Athene cunicularia floridana*)	ST/ MBTA	Predominantly peninsular Florida	Nests in open, mowed areas	Yes

Species	Status	Distribution	Habitat	Documented on MacDill?
Florida sandhill crane (*Grus canadensis pratensis*)	ST/ MBTA	Throughout the Florida panhandle	Inhabits freshwater marshes, prairies, and pastures	Yes
Florida scrub-jay (*Aphelocoma coerulescens*)	FT/ MBTA	Throughout central peninsular Florida	Florida oak scrub and scrubby flatwoods found on prehistoric and current sand dunes	No
Great blue heron (*Ardea herodias*)	MBTA	Throughout Florida	Found in swamps, marshes, tideflats, and shores	No
Gull-billed tern (*Gelochelidon nilotica*)	MBTA	Throughout Florida	Primarily inhabits rivers, lakes, and freshwater marshes.	No
Least tern (*Sternula antillarum*)	ST/ MBTA	Throughout Florida, mostly along the coastal edges	Forages in drainage ditches and ponds on the installation	Yes
Lesser yellowlegs (*Tringa flavipes)*	MBTA	Throughout Florida	Prefers boreal forest and forest/tundra transition areas.	No
Little blue heron (*Egretta caerulea*)	ST/ MBTA	Throughout Florida	Common along shorelines, ditches, and mangroves	Yes
Long-tailed duck (*Clangula hyemalis*)	MBTA	Throughout Florida	Favors saltwater	No
Magnificent frigatebird (*Fregata magnificens*)	MBTA	Along the western and eastern coasts of Florida	Found along coasts and islands	No
Mangrove cuckoo (*Coccyzus minor*)	MBTA	Throughout Florida	Found in mangroves, swamps, and tropical hardwood groves	No
Pectoral sandpiper (*Calidris melanotos*)	MBTA	Throughout Florida	Prefers coastal or near coastal habitat. Can be found further inland in wetlands that have open mudflats	No
Piping plover (*Charadrius melodus*)	FT/ MBTA	Along the coastal edges of Florida	Occurs along shorelines in winter	Yes
Prairie warbler (*Setophaga discolor*)	MBTA	Throughout Florida	Prefers early successional shrubby habitats (e.g., clearcut oak forests and young pines)	No
Red-breasted merganser (*Mergus serrator*)	MBTA	Along the western and eastern coasts of Florida	Found in coastal waters, estuaries, bays, and open ocean	No
Red-cockaded woodpecker (*Leuconotopicus borealis*)	FE/ MBTA	Throughout Florida	Prefers longleaf pine stands and occasionally slash pines	No
Reddish egret (*Egretta rufescens*)	ST/ MBTA	Coastal areas central eastern/central and southwestern	Prefers shorelines, sandbars, and shallow salt ponds	Yes

Species	Status	Distribution	Habitat	Documented on MacDill?
Ring-billed gull (*Larus delawarensis*)	MBTA	Throughout Florida	Found at coasts, bays, lakes, piers; any place associated with water	No
Roseate spoonbill (*Platalea ajaja*)	ST/ MBTA	Central eastern/ western along the coast and southern coast	Forages and roosts along shorelines and mangrove systems	Yes
Royal tern (*Thalasseus maximus*)	MBTA	Along the western and eastern coasts of Florida	Found at sandy beaches, coasts, and salt bays	No
Rufa red knot (*Calidris canutus rufa*)	FT/ MBTA	Along the coastal edges of Florida	Uses relatively undisturbed sandy beaches and tidal flats	Yes
Ruddy turnstone (*Arenaria interpres morinella*)	MBTA	Along the western and eastern coasts of Florida	Prefers mudflats, sandy coastlines, wetlands, rocky beaches, and intertidal areas	No
Scott's seaside sparrow (*Ammodramus maritimus peninsulae*)	ST/ MBTA	Predominantly the northwestern edge of peninsular Florida	Primarily inhabits tidal marshes in Florida	No
Short-billed dowitcher (*Limnodromus griseus*)	MBTA	Along the western and eastern coasts of Florida	Prefers brackish lagoons and coastal mud flats	No
Snowy Egret (*Egretta thula*)	MBTA	Throughout Florida	Found in marshes, ponds, shores, and swamps	Yes
Snowy plover (*Charadrius nivosus)*	ST/ MBTA	Sandy beaches along the Gulf of Mexico coast	Occurs along shorelines in winter; observed along the shoreline at MacDill AFB in 2016	Yes
Surf scoter (*Melanitta perspicillata*)	MBTA	Along the western and eastern coasts of Florida	Prefers marinas, ocean surf, and salt bays	No
Swallow-tailed kite (*Elanoides forficatus*)	MBTA	Throughout Florida	Commonly found in or near prairie or marsh, cypress swamps, and riverside swamp forests.	No
Tricolored heron (*Egretta tricolor*)	ST/ MBTA	Throughout Florida	Common along shorelines, ditches, and mangroves	Yes
Willet (*Tringa semipalmata*)	MBTA	Along the western and eastern coasts of Florida	Found in marshes	No
Wilson's plover (*Charadrius wilsonia*)	MBTA	Along the western and eastern coasts of Florida	Prefers sandy inlets, tidal flats, and open beaches	No
White-winged scoter (*Melanitta fusca*)	MBTA	Along the western and eastern coasts of Florida	Salt bays, ocean, and lakes	No
White ibis (*Eudocimus albus*)	MBTA	Throughout Florida	Salt, fresh, and brackish, marshes; mangroves, shallow water	Yes

Species	Status	Distribution	Habitat	Documented on MacDill?
Whooping crane (*Grus americana*)	MBTA	One area in northern Florida and one in central Florida	Marshes, prairie pools, and coastal marshes	No
Wood stork (*Mycteria americana*)	FT/MBTA	Throughout most of the Florida panhandle	Occurs regularly in freshwater and estuarine wetlands	Yes
Reptiles and Amphibians				
American alligator (*Alligator mississippiensis*)	FT (S/A)	Throughout Florida	Found occasionally	Yes
American crocodile (*Crocodylus acutus*)	FT	Along the eastern, southern, and western coasts	Prefers mangrove swamps and low-energy mangrove-lined bays, creeks, and inland swamps	No
Eastern diamondback rattlesnake (*Crotalus adamanteus*)	UR	Throughout coastal Florida, predominantly southwestern Florida	Found in Florida pinelands	Yes
Eastern indigo snake (*Drymarchon couperi*)	FT	Throughout Florida	Occurs in woody uplands	Yes
Florida pine snake (*Pituophis melanoleucus mugitus*)	UR/ST	Throughout Florida	Prefers xeric pine flatwoods	No
Gopher frog (*Lithobates capito*)	UR/ST	Throughout Florida, except the southern tip	Prefers xeric habitats, including pine, oak, and sandhills	Yes
Gopher tortoise (*Gopherus polyphemus*)	ST	Throughout Florida	Occurs in recently burned pine flatwoods	Yes
Green sea turtle (*Chelonia mydas*)	FT	Throughout the Florida coasts	Uses beach areas for nesting	Yes
Hawksbill sea turtle (*Eretmochelys imbricata*)	FE	Along the Atlantic coast and Keys	Uses beach areas for nesting	No
Kemp's Ridley sea turtle *(Lepidochelys kempii*)	FE	Scatters isolated coastal beaches	Uses beach areas for nesting	No
Leatherback sea turtle (*Dermochelys coriacea*)	FE	Predominantly along the Atlantic coast	Uses beach areas for nesting	No
Loggerhead sea turtle (*Caretta caretta*)	FT	Along the Atlantic coast and Keys	Uses beach areas for nesting	Yes
Short-tailed snake (*Lampropeltis extenuata*)	UR/ST	Predominantly west central Florida	Prefers xeric pine flatwoods	No

Species	Status	Distribution	Habitat	Documented on MacDill?
Fishes				
Giant manta ray (*Manta birostris*)	FT	Mostly southern Florida	Occasionally seen around coral reefs and fish cleaning stations	No
Gulf sturgeon (*Acipenser Oxyrinchus desotoi*)	FT	Mostly throughout the northern portions of Florida	Occurs in most major river systems from Mississippi River to Suwannee River (Florida), and marine waters south to Florida Bay	No
Smalltooth sawfish (*Pristis pentinata*)	FE	Mostly the southern panhandle tip	Juveniles inhabit coastal areas such as estuaries, river mouths, and bays year-round	No
Insects				
Monarch butterfly (*Danaus plexippus*)	FC	Throughout Florida	This species lays eggs on obligate milkweed plants (*Asclepia* spp.).	Yes
Plants				
Florida golden aster (*Chrysopsis floridana*)	FE	Mostly around Tampa	Generally found in sand pine scrub	No
Pygmy fringe-tree (*Chionanthus pygmaeus*)	FE	Predominately central Florida	Generally found in the xeric, coarse white sand of scrub/oak scrub	No

Sources: MacDill AFB 2019c, 2022c, 2024b; USFWS 2023a, 2024a; FWC 2023; FDACS 2024

Key: PE – proposed endangered; FT – federally threatened; MMPA – Marine Mammal Protection Act; ST – state threatened; MBTA – Migratory Bird Treaty Act; BGEPA – Bald and Golden Eagle Protection Act; FE – federally endangered; S/A – similarity of appearance; UR – under review; FC – federal candidate

Figure 3-3. MacDill AFB Special Status Species Observations and Habitat

The Florida burrowing owl is considered a resident on MacDill AFB. According to a 2018–2019 survey, the Florida burrowing owl population was estimated at 15 adults, although more individuals may occur during peak nesting season. There were 32 potentially occupied owl burrows within the boundaries of the airfield at that time (MacDill AFB 2019c). See **Figure 3-3** for locations of known Florida burrowing owl observations and habitat.

The gopher tortoise is also a resident of MacDill AFB. This species prefers dry upland habitats, including sandhills and pine flatwoods, but is also found in human-altered environments. Based on 2018–2019 surveys, there are potentially 297 occupied gopher tortoise burrows and 18 abandoned burrows; 11 of the occupied burrows were classified as juvenile tortoises.

The gopher frog was first documented on MacDill AFB during the 1994 Florida Natural Areas Inventory and again during the 2012 threatened and endangered species surveys. The gopher frog was not documented during the 2018–2019 threatened and endangered species surveys. Since this species prefers xeric habitats, it is unlikely to be present within any of the project areas (MacDill AFB 2019c). The Florida pine snake, short-tailed snake, and eastern indigo snake could occur on MacDill AFB in association with gopher tortoise habitat. These species of snake benefit from management of gopher tortoise habitat; however, the eastern indigo snake was only documented once on MacDill AFB, more than 25 years ago (MacDill AFB 2019c, 2022c).

American alligators are found on the installation. American alligators that may pose a danger to the population or assets on MacDill AFB are removed by FWC-licensed trappers and/or relocated by installation personnel to natural areas of the installation (MacDill AFB 2022c).

No critical habitat for federally listed species exists on MacDill AFB (USFWS 2024a).

3.4.3 Environmental Consequences

The biological resources analysis discusses impacts from construction, renovation, demolition activities, and operations on vegetation, wildlife, and special status species. For vegetation and wildlife, species have unique, fundamental needs for food, water, shelter, and space, and can be sustained only where their specific combination of habitat requirements are available. The removal of elements necessary for a species' habitat impacts the individual's ability to exist. Therefore, the framework for analysis of impacts on wildlife and vegetation is based on whether the action would cause habitat displacement resulting in reduced feeding or reproduction, removal of critical habitat for sensitive species, and/or behavioral avoidance of available habitat as a result of noise or human disturbance. The level of impacts on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to the proposed activities, and (4) the duration of ecological ramifications. Impacts on biological resources are considered significant if species or special habitats are adversely affected over large areas, or if disturbances cause population size or distribution reductions of a species of concern.

3.4.3.1 PROPOSED ACTION

Vegetation. Short- and long-term, minor, adverse impacts on vegetation would occur from temporary disturbance of vegetation and soil compaction during construction, demolition, and renovation and from permanent vegetation removal for new facilities and associated infrastructure. Short-term impacts from temporary disturbance of approximately 756,600 SF of vegetation would occur due to the use of heavy equipment and may include trampling and soil compaction. Areas of temporary ground disturbance would be reseeded with native vegetation. Permanent removal of vegetation and trees at new construction sites would create long-term impacts on approximately 24,400 SF from permanent reduction in cover on the installation. With the exception of the four culvert repair and replacements, the majority of the project areas are already highly disturbed from ongoing routine maintenance and landscaping activities and are of low ecological value; therefore, these impacts would be minor. Each culvert repair and replacement would include trimming and limited removal of mangrove limbs for access to the existing culverts and installation of new culverts. Appropriate permits and mitigations would be coordinated with USACE and FDEP during the design process. Additionally, MacDill AFB would adhere to mangrove trimming stipulations outlined in Sections 403.9321–403.9333 of the Mangrove Trimming and Preservation Act.

Wildlife. It is anticipated there would be short-term, minor, adverse impacts from the Extend DUC Ramp and Apron Flood Lighting projects; and moderate adverse impacts from the rest of the projects associated with water or wetland features that provide habitat for a larger range of wildlife species from increased noise and potential displacement associated with construction, demolition, and renovation activities. Some birds, small mammals, invertebrates, and other common small wildlife species may use these project areas for shelter and feeding. To the degree practicable, MacDill AFB would survey waterways prior to installation of USFWS-approved manatee barriers to minimize impacts on wildlife species. Long-term, noise exposures on wildlife would be unchanged from existing conditions.

Short-term, minor to moderate, adverse impacts on wildlife would occur from noise associated with heavy equipment use and increased human presence during facility construction, demolition, and renovation, as well as stormwater and pollution runoff during construction activities. The increase in the frequency or intensity of noise from facility construction, demolition, and renovation could temporarily displace wildlife, and proposed construction activities would require use of heavy equipment that would generate short-term increases in noise near the area. At a distance of 50 feet from operating heavy equipment, noise levels were estimated to range between 80 and 90 dBA (see **Table 3-5**). With multiple types of equipment operating concurrently, noise levels could be 65 dBA at 750 feet from active construction sites. Wildlife species would be expected to avoid construction areas and may temporarily move to adjacent suitable habitat during construction activities. Once construction activities have ceased, affected wildlife may return to the area. Furthermore, wildlife currently inhabiting the project areas would be habituated to noise disturbances because of the existing highly urbanized environment and proximity to an active military airfield with ongoing flight operations. However, a small increase in the frequency of startle responses or other behavioral modifications caused by the proposed construction activities could occur. For project areas that include proposed construction activities that would occur near culverts or adjacent to areas

where shorebirds or sea turtles might nest, or aquatic species may be present, the installation could conduct surveys prior to implementation of construction activities. Additionally, BMPs and standard operating procedures (SOPs) would be implemented to minimize impacts to species that may be present during construction activities.

Reviews of the effects of sound on wildlife are available (Larkin et al. 1996), and studies referenced in those reviews have documented that chronic exposure to continuous high sound levels (e.g., traffic, construction) can cause physical damage and hearing impairment; physiological effects; and changes in behavior, habitat use, and possibly reproduction. The most likely detectable response of wildlife to disturbance could be a temporary change in behavior, such as flushing or some other "startle" response. However, birds and other wildlife have been documented to become habituated to noises after continuous or frequent exposure.

Operation of the respective new or upgraded facilities and infrastructure would not result in long-term adverse impacts on species. Long-term, minor, adverse impacts on wildlife would occur from the permanent loss of potential habitat for wildlife. The loss of habitat would be considered minor because the proposed construction activities would occur on predominantly improved or semi-improved areas that do not provide high-quality habitat for wildlife species. If required, tree removal would be minimal. Removal of dead trees and vegetation, which provide habitat for birds and bats, would be permanently lost. BMPs would be followed to the greatest extent possible to reduce or avoid impacts. These BMPs would include topping trees or removing dead limbs instead of removing the entire tree, leaving as much trunk height as possible, creating artificial cavities (nest boxes), and drilling into trees to replace cavities lost during tree removal.

Special Status Species. Impacts relating to noise exposures on special status species would be similar to those described in the **Wildlife** discussion. Adverse impacts on aquatic species (e.g., the west Indian manatee) would occur from culvert repair and replacements that would include the installation of USFWS-approved manatee barrier infrastructure to keep manatees from entering the installation's ditch system and trimming and limited removal of mangrove limbs hanging out over the water, if required for access. BMPs and SOPs would be implemented to reduce overall impacts. Appropriate permits and mitigations would be coordinated with USACE and FDEP during the design process and activities would adhere to stipulations outlined in the Mangrove Trimming and Preservation Act. Waterways and culverts would be surveyed for special status species prior to mangrove trimming or installation of manatee barriers. For culverts near areas where West Indian manatees have been documented or are suspected, daily manatee surveys would be conducted prior to work and to ensure no manatees are trapped in the canal prior to grate attachment. Additionally, BMPs that could be implemented to further minimize potential impacts include turbidity barriers, standard manatee conditions for in-water work, temporary manatee signage, and contractor education. Once installed, the manatee barriers would provide long-term, minor, beneficial impacts on the west Indian manatee, protecting them from entering and potentially stranding within the installation canal system.

There could be short- and long-term, minor, adverse impacts on protected birds and the green and loggerhead sea turtles that inhabit, forage, or nest on, adjacent habitat that is east of the Construct Bayshore Gate, Culvert Repair and Replacement: Bayshore Boulevard, and Widen

Zemke Avenue projects. Similar to **Wildlife** discussions, short-term impacts on protected species and habitats would include construction noise, increased pollution, and added requirement for stormwater management and erosion control. Long-term impacts include operational noise and lighting that might impact sleeping, foraging, and nesting activities; it is assumed that, if bothered, species would move to adjacent suitable habitat to continue the activity. Short-term stormwater and pollution runoff impacts, and long-term light and pollution impacts would be minimized by implementing BMPs and SOPs. For project areas that include proposed construction activities that would occur near culverts or adjacent to areas where shorebirds or sea turtles might nest, the installation could conduct surveys prior to implementation of construction activities.

There could be short- and long-term, minor, adverse impacts on tricolored bats; it is likely that foraging bats range all over the installation and could be present or use any of the Culvert Repair and Replacement or Demolish Building 82 project areas, as well as potentially in adjacent habitat. Other than minimal trimming of mangrove trees, no trees are anticipated to be impacted. If required, tree removal would be minimal, BMPs similar to what is described in the wildlife section would be implemented, and surveys by a qualified bat biologist could be conducted prior to tree removal. Additionally, pre-construction surveys would be done prior to culvert repairs and demolition activities to minimize potential impacts to the tricolored bat. It is assumed that tricolored bats would be habituated to general noise and would not react at all, or in a strenuous a manner, to associated construction noise or disturbances.

Long-term, noise exposures on special status species would be unchanged from existing conditions. The special status species near MacDill AFB have continuously been exposed to frequent daily aircraft operations. Therefore, these species are likely habituated and would not generally react to operational noise.

As described in **Section 3.4.2**, suitable habitat for the Florida burrowing owl, gopher tortoise, gopher frog, Florida pine snake, and short-tailed snake occur near multiple project areas; however, no burrows have been documented within any project areas. Impacts on the eastern diamondback rattlesnake are anticipated to be similar to those described for federally and state-listed species. Pre-construction surveys would be done prior to construction activities to minimize potential impacts to these species.

In compliance with Section 7 of the ESA, MacDill AFB has initiated informal consultation with the USFWS. Additionally, MacDill AFB provided a courtesy letter to the National Marine Fisheries Service (NMFS) stating a determination of no effect on the giant manta ray, Gulf sturgeon, smalltooth sawfish, and all federally listed sea turtles. Consultation with the USFWS is ongoing, and this analysis will be updated to reflect the USFWS and NMFS responses, once received. Copies of correspondences regarding the ESA Section 7 consultation will be provided in **Appendix A**.

3.4.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions described in

Section 3.4.2 would remain unchanged. Therefore, no impacts on biological resources would be expected.

3.4.3.3 CUMULATIVE IMPACTS

Cumulative impacts on biological resources could be associated with 13 reasonably foreseeable installation actions. The Power Generation Facility, Pipeline Replacement, USSOCOM Military Information Support Operations (MISO) Facility, USSOCOM – Special Operations Forces Operations Integration Facility, Florida Government Utility Authority (FGUA) Sanitary Sewers (deep injection well and west side expansion), Energy Resilience and Conservation Investment Program (ERCIP) projects (converting overhead electrical to underground and energy resilience), Fuels Operations Facility, Fire Station, Logistics Readiness Squadron (LRS) Vehicle Maintenance Complex, and KC-46A Main Operating Base #6 (MOB 6) Beddown projects could impact vegetation, decrease available habitat, and create short-term noise that could disturb wildlife and special status species. Present and reasonably foreseeable actions would have less than significant adverse impacts, as would the Proposed Action because the cumulative effects would occur where few native wildlife and no protected species have been documented. Additionally, the Marina Channel Maintenance Dredging project could impact marine species (e.g., the west Indian manatee, loggerhead sea turtle, etc.) in such a way as to make them more likely to use the channels and tributaries within the installation, or less likely to use habitat appropriate beaches for nests. Future project-specific BMPs and SOPs would be implemented to reduce this risk to less than significant impacts. Long-term, cumulative beneficial impacts would occur from implementation of projects protective of wetlands, natural resources, habitats and species.

3.5 Water Resources

3.5.1 Definition of Resource

Water resources are natural and human-made sources of water that are available for use by and for the benefit of humans and the environment. Water resources include groundwater, surface water, floodplains, and wetlands. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

3.5.1.1 GROUNDWATER

Groundwater is water that collects or flows beneath the Earth’s surface, filling the porous spaces in soil, sediment, and rocks. A deposit of subsurface water that is large enough to tap via a well is referred to as an aquifer. Groundwater originates from precipitation, percolates through the ground surface, and is often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater can typically be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

3.5.1.2 SURFACE WATER

Surface water includes natural, modified, and constructed water confinement and conveyance features above groundwater that may have a defined channel and discernable water flows as well as associated flora, fauna, and habitats. These features are generally classified as streams,

creeks, springs, wetlands, natural and artificial impoundments (e.g., ponds, lakes), and constructed drainage canals and ditches.

The CWA provides the statutory basis for state water quality standards. FDEP is responsible for implementing state laws providing for the protection of the quality of Florida's water resources (FDEP 2024b). The FDEP has established five surface water classifications according to designated uses. In addition to these classifications, FDEP may designate a surface water body as an Outstanding Florida Water. An Outstanding Florida Water is a surface water body that has exceptional recreational or ecological significance (FDEP 2023a).

USEPA regulates water quality standards under the federal Safe Drinking Water Act (42 USC Section 300 et seq.) and the CWA. Section 303(d) of the CWA requires states to identify and develop a list of impaired water bodies where technology-based and other required controls have not provided attainment of water quality standards. Section 305(b) of the CWA requires states to assess and report the quality of their water bodies. The State of Florida combined their Section 303(d) and 305(b) lists into one report, referred to as the Integrated Report. The Integrated Report identifies those water bodies that are impaired and do not meet designated uses, and it establishes total maximum daily loads for the pollutants of concern (FDEP 2022a).

3.5.1.3 FLOODPLAINS

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Such lands might be subject to periodic or infrequent inundation from rain or melting snow. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body.

The risk of flooding typically depends on local topography, the frequency and intensity of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by FEMA, which defines 100- and 500-year floodplains. The 100-year floodplain is an area that has a 1 percent chance of inundation by a flood event in a given year, while 500-year floodplains have a 0.2 percent chance of inundation in a given year. In addition to the 100- and 500-year floodplains, FEMA designates Coastal High Hazard Areas (or Special Food Hazard Areas) along the coasts that have additional hazards due to wind and wave action.

EO 11988, *Floodplain Management*, requires federal agencies to determine whether a proposed action would occur within a floodplain and directs them to avoid floodplains to the maximum extent possible wherever there is a practicable alternative. EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, supplements the existing floodplain management policy in EO 11988 by adding a new floodplain definition and a Federal Flood Risk Management Standard to cover a wider area than EO 11988.

EO 14008, *Tackling the Climate Crisis at Home and Abroad*; DoD's 2020 UFC-2-100-01, *Installation Master Planning*; and DoD's 2021 *Climate Adaptation Plan* mandate and guide planning and development to reduce resource consumption, emissions, and inefficiency and to

ensure the climate resiliency of newly constructed buildings and infrastructure amid impacts on floodplains, projected sea level rise, storm surges, and climate shifts.

3.5.1.4 WETLANDS

Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, and erosion protection.

Wetlands are protected as a subset of the waters of the United States (WOTUS) under Section 404 of the CWA. The term "WOTUS" contains relatively permanent bodies of water forming geographic features such as lakes, rivers, streams, and oceans. Also incorporated are special aquatic habitats, including wetlands when they have a continuous surface connection to water bodies that are WOTUS. USACE defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR 328.3(c)(1)). The final conforming rule Amendments to the "Revised Definition of 'Waters of the United States'" was issued 8 September 2023 by the USEPA (88 *Federal Register* 61964).

EO 11990, *Protection of Wetlands*, requires that federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetlands.

DoDI 4715.03, *Natural Resources Conservation Program*, includes requirements for the protection of natural resources, including wetlands, on DoD-controlled land.

The FDEP Environmental Resource Permit Program regulates projects in, on, or over wetlands or other surface waters under 62-330 FAC, *Environmental Permitting Process*. The Environmental Protection Commission of Hillsborough County also regulates and permits wetland impacts.

3.5.2 Existing Conditions

The ROI for the analysis of effects on water resources comprises the installation and the surrounding waterways and shoreline.

3.5.2.1 GROUNDWATER

MacDill AFB in general has three aquifer systems including (in descending order): a shallow, surficial aquifer system, an intermediate aquifer system/intermediate confining unit, and the Floridan Aquifer System (FAS) that underlies all of Florida (FDEP 2023b). The surficial aquifer system is composed of sand, clayey sand, and shell; is approximately 20 feet thick; and is underlain by heterogeneous calcareous clays and limestone with varying permeability. This

surficial aquifer is used for small irrigation systems off-installation and is not used by MacDill AFB. This shallow aquifer ranges from the surface to approximately 5 feet below ground surface at inland locations and is highly susceptible to groundwater contamination, primarily due to shallow water table depth and highly permeable sediments with underlain limestone. MacDill AFB underground storage tanks (USTs), landfills, and golf courses (i.e., through fertilizer applications) are known sources of contamination for the surficial aquifer. Recharge of the surficial aquifer primarily occurs through precipitation percolation (MacDill AFB 2022c).

The FAS spans an area of approximately 100,000 square miles, ranges from 100 to 3,000 feet in thickness, and is underlain with continuous sequences of carbonate rocks (USGS 2021). The Floridan aquifer is not substantially recharged from the surface at MacDill AFB. The installation is primarily a discharge zone for the FAS due to an upward flow of groundwater in the vicinity. This aquifer has slight contamination but is not contaminated to the extent that remediation is required (MacDill AFB 2022c).

3.5.2.2 SURFACE WATER

MacDill AFB is within the Tampa Bay (middle) watershed, spanning approximately 410 square miles in west-central Florida (USF 2024). The installation is surrounded by Hillsborough Bay to the northeast, Tampa Bay to the south, and Old Tampa Bay to the northwest. Raccoon Hammock and Broad Creek are the main natural drainage features on MacDill AFB, and both are located on the southern portion of the installation. Surface water flows on the installation are primarily stormwater runoff. MacDill AFB is crisscrossed with drainage canals, and a large area of mangrove swamps is located along the southern portion of the installation. Most of these canals are interconnected and influenced by tides. Ditches and pipes have also been installed to drain the developed portions of the installation. The drainage system is composed of approximately 24 miles of culverts and 56 miles of open ditches and canals. The drainage systems ultimately discharge into either Tampa Bay or Hillsborough Bay. Two large stormwater impoundments occur on MacDill AFB, Lake McClelland and Lewis Lake (totaling approximately 20 acres), situated on the eastern side of the installation. Another 35 acres of small, unnamed impoundments occur throughout the installation, 14 of which are located on the north and south golf courses (MacDill AFB 2022c). The nearest designated WOTUS to MacDill AFB are the Hillsborough River (at the northern end of Hillsborough Bay, approximately 6 miles north of the installation); Archie Creek (approximately 5 miles northeast of the installation across Hillsborough Bay near 78th Street); and the Alafia River, approximately 4.5 miles east of the installation across Hillsborough Bay near the East Bay Raceway Park (USGS 2024).

FAC 62-302.40 classifies all surface waters according to their designated use. Tampa Bay is a Class III water, with portions of the bay south and southwest of MacDill AFB classified as Class II waters. Class III is designated for fish consumption; recreation; propagation; and maintenance of a healthy, well-balanced population of fish and wildlife. Class II is designated for the same uses as Class III and includes shellfish propagation or harvesting. The Lower Hillsborough Bay, in the Tampa Bay watershed, is listed as impaired due to the presence of mercury in fish tissue (USEPA 2024a).

The Construct Bayshore Gate and Widen Zemke Avenue project areas are nearly adjacent to Hillsborough Bay. The Culvert Repair and Replacements would occur within canals on the

installation. Although several streams and ponds occur near some of the other project areas, none of the other project areas coincide with surface water features aside from wetlands. See **Section 3.5.2.4** for more information on wetlands that coincide with the project areas.

3.5.2.3 FLOODPLAINS

Approximately 93 percent of MacDill AFB is within the 100-year floodplain, which is included in the 500-year floodplain. According to FEMA Flood Insurance Rate Map Numbers 12057C0476J,12057C0457J, 12057C0478J, 12057C0456J, and 12057C0459J, all effective October 2021, all project areas are within the 100-year floodplain, Flood Zone AE (FEMA 2021). In this zone, properties have a greater than 1 percent chance of experiencing flooding in any given year. The installation constructs and manages facilities in this area to be consistent with the intent of the floodplain management guidelines promulgated under the National Flood Insurance Program. The Construct Bayshore Gate and Widen Zemke Avenue project areas are located within a Coastal High Hazard Area (or Special Flood Hazard Area) that would be subjected to storm hazards due to wind and wave action.

3.5.2.4 WETLANDS

Approximately 20 percent of MacDill AFB is covered by wetlands, with more than 500 contiguous acres of mangroves along the southern coastline of the installation. The 1,195 acres of wetlands include 880 acres of estuarine scrub/shrub emergent wetlands, 115 acres of needle-leaved forested wetlands, and 200 acres of palustrine wetlands (MacDill AFB 2019c, 2022c). A jurisdictional water channel is located south of the Zemke Avenue Widening project area. The Construct Northern Boundary Fence project area coincides with approximately 2.3 acres of forested and emergent wetlands; the Apron Flood Lighting project area coincides with a tenth of an acre of emergent wetlands; and the Culvert Repair and Replacement project areas overlap approximately 0.8 acres of emergent wetlands/canals. No other project areas coincide with wetlands.

3.5.3 Environmental Consequences

Criteria for evaluating impacts related to water resources associated with the proposed action are water quality, groundwater recharge, and adherence to applicable regulations. A proposed action would have significant impacts on water resources if any of the following were to occur:

- substantial water quality impacts or endangerment of public health by creation or worsening adverse health hazard conditions
- damage of or threats to unique hydrologic characteristics
- violation of established laws or regulations that have been adopted to protect or manage the water resources of an area.

3.5.3.1 PROPOSED ACTION

Groundwater. Short- and long-term, negligible to minor, adverse impacts on the surficial aquifer at MacDill AFB could occur due to potential intersection between construction, demolition, and renovation and the surficial aquifer as well as impacts on groundwater recharge from an increase in impervious surface. The surficial aquifer at MacDill AFB ranges from the surface to 5 feet below ground surface at inland locations. Shallow depth and high permeability would

cause this shallow aquifer to be vulnerable to activities associated with excavation, demolition, and construction that may intersect the local groundwater table in areas where the surficial aquifer is at and/or just under surface levels. Incidental contaminant discharges (e.g., fuel, lubricants) from construction equipment may potentially reach the surficial aquifer in this area.

Potential per- and polyfluoroalkyl substances (PFAS) contamination at MacDill AFB near the Apron Flood Lighting and Culvert Repair and Replacement: Marina Bay Drive and Southshore Avenue projects could also leach into the groundwater during ground disturbance for proposed repairs (see **Figure 2-10** and **Figure 2-11**). As a protective measure, any groundwater that is dewatered during construction at these project areas would be containerized, sampled, and disposed of appropriately off-site. There are no surface water to groundwater or groundwater pathways that can reach off-installation drinking water wells. Groundwater flow is to the west, south, and southeast into Hillsborough Bay and off-installation drinking water wells are located upgradient from the groundwater flow pathway to the north-northwest of MacDill AFB (MacDill AFB 2021a). See **Section 3.9** for more information about the ongoing remedial investigation (RI) for PFAS contamination and petroleum products at MacDill AFB.

Groundwater recharge to the surficial aquifer system could be impacted by an approximately 24,400-SF increase in impervious surface and associated increased stormwater runoff to nearby waterbodies, thereby decreasing infiltration in soils. A decrease in infiltration and increase in flow rate could intensify erosion and sedimentation from impervious surface runoff. Specific BMPs to decrease sedimentation and soil erosion in runoff could include stabilized construction entrances, silt fencing, berms and swales, check dams, vegetated channels, basins and traps, outlet protection, erosion control blankets, and level spreaders. Most of the proposed development activities would occur in previously disturbed and developed areas at MacDill AFB. The impacts from increased surface water runoff would be reduced by the regulations outlined in Section 438 of the Energy Independence and Security Act (EISA; 42 USC Section 17094). EISA Section 438 requires stormwater design for federal construction projects that disturb more than 5,000 SF. Use of stormwater management practices outlined in EISA Section 438, such as revegetation and use of porous pavements, cisterns, and green roofs, would decrease the severity of impact that stormwater runoff would have on this aquifer. Additionally, the stormwater runoff flow on the installation would be improved through the Culvert Repair and Replacement project, offsetting some of the adverse impacts.

Surface Water. Short- and long-term, minor, adverse impacts on surface water at MacDill AFB would occur due to increased erosion and sedimentation associated with ground disturbance from construction activities and stormwater runoff from increased impervious surface areas.

Short-term, minor, adverse impacts on surface water at MacDill AFB would occur due to increased erosion and sedimentation associated with construction**,** repair, and demolition for the proposed projects. Construction, demolition, and renovation activities resulting in ground disturbance (approximately 781,000 SF) would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system and, thereby, surface waters. Erosion and sediment controls and stormwater management practices, such as use of silt fences and construction

phasing, would be implemented to minimize the potential for adverse impacts associated with stormwater runoff, erosion, and sedimentation on surface water quality.

Long-term, minor, adverse impacts on surface water quality could occur from the approximately 24,400-SF increase in impervious surface and associated increase in stormwater runoff from the proposed construction and repair projects. Most of the proposed development would occur in areas already developed and/or the previously disturbed cantonment area of MacDill AFB. EISA requirements would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to rate, volume, and flow duration. Stormwater discharge from MacDill AFB would not likely cause significant changes in the quality of Hillsborough Bay; it is already listed as impaired due to the presence of mercury in fish tissue. Adverse impacts on water quality in Tampa Bay may occur due to stormwater discharge and runoff at MacDill AFB. Tampa Bay is classified as a Class III water, which is designated for fish consumption; recreation; and maintaining a healthy, well-balanced population of fish and wildlife. Measures implemented in accordance with the installation and project-specific Stormwater Pollution Prevention Plans (SWPPPs) and Erosion and Sedimentation Control Plans (ESCPs) would avoid or minimize the potential adverse effects related to stormwater runoff and sedimentation, including into Tampa Bay. Conversely, the Culvert Repair and Replacement project would reduce some of the adverse impacts from the increased impervious surfaces by improving stormwater flow on the installation and decreasing potential pollutant loading into surface waters. Due to the distance between MacDill AFB and the closest WOTUS, no impacts on WOTUS are anticipated.

Floodplains. Long-term, minor, adverse impacts on the surrounding floodplain would be expected from an increase in flooding potential from stormwater runoff and associated increased erosion rate from the proposed projects. Early public notice was issued at scoping per EO 11988. The majority of MacDill AFB is within the 100- and 500-year coastal floodplain, meaning all runoff and discharge occurs within a floodplain. BMPs, such as using low-impact development where applicable, in conjunction with adhering to the installation and project-specific SWPPPs, would be used to reduce stormwater runoff where possible. Construction would not affect the flow of water in a flood event to impact the floodplain.

To minimize impacts on floodplains or from flooding, new facilities would be constructed in conformance with EO 14008; DoD's UFC-2-100-01 and UFC 3-201-01; DoD's Directive-type Memorandum 22-003, *Flood Hazard Area Management for DoD Installations*; and DoD's 2021 *Climate Adaptation Plan*, which include constructing mission critical facilities 3 feet above the base flood elevation, and non-mission critical facilities 2 feet above the base flood elevation. Environmental Resource Permits through the Southwest Florida Water Management District would be obtained as appropriate, and additional stormwater features (e.g. drainage swales and detention basins designed to provide for water quality and quantity treatment sufficient to withstand a 25-year, 24-hour storm event) would be incorporated to minimize effects on stormwater management and address runoff concerns.

Long-term, minor, beneficial impacts on floodplains would occur due to improved stormwater flow from the Culvert Repair and Replacement project. Replacement of existing pipe culverts

with box culverts would allow for greater volume and improved stormwater and surface water flow rate, reducing the potential for flooding on the installation.

Wetlands. Short-term, negligible to minor, adverse impacts on wetlands would occur from deposition of fill materials or increased sedimentation into wetlands that could occur during vegetation removal, ground disturbing activities, and construction for the Construct Northern Boundary Fence and Culvert Repair and Replacement projects. Installation of apron flood lighting would be conducted in a manner that would avoid wetland impacts. Ground disturbance associated with the installation and construction for the Construct Northern Boundary Fence and Culvert Repair and Replacement projects could result in short-term deposition of fill materials or increased sedimentation, but would be conducted in a manner such that activities would minimize impacts on wetlands to the maximum extent practicable. Less than 0.25 percent of the total acreage of wetlands on MacDill AFB would be potentially impacted by construction activities; therefore, impacts would be less than significant. Consultation with FDEP and USACE, as appropriate, would be conducted to minimize wetland impacts and identify potential avoidance, minimization, and conservation measures. Due to the impact on wetlands, a Section 404 permit from USACE and an Environmental Resource Permit from FDEP would be obtained prior to construction, and any necessary mitigations would be identified during project design.

3.5.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not be implemented, and the existing conditions described in **Section 3.5.2** would remain unchanged. Without implementation of the culvert repair and replacements, stormwater flow would continue to be impeded at the Bayshore Boulevard, Marina Bay Drive, Southshore Avenue, and West Boundary Street culverts due to deteriorating conditions and the limiting size of the existing pipe culverts, increasing flooding potential on the installation. Therefore, long-term, minor, adverse impacts on water resources would continue to occur.

3.5.3.3 CUMULATIVE IMPACTS

Short and long-term, negligible to minor, adverse impacts on water resources would be expected under the Proposed Action due to potential water quality, flooding, and wetland impacts. If construction of any of the proposed projects were to occur concurrently with construction for any of the reasonably foreseeable actions identified in **Table 3-1**, cumulative impacts would be expected to be similar. Ground disturbance during construction and demolition would result in increased erosion and sedimentation potential and pollutant loading. Additionally, the increase in impervious surface area under the Proposed Actions combined with that under the reasonably foreseeable actions would result in increased stormwater runoff, which could also result in increased erosion and sedimentation potential and pollutant loading, as well as increased flooding potential in the area. Adverse cumulative impacts would be minimized with the implementation of proper stormwater management controls, including stormwater BMPs, to prevent flooding, erosion and sedimentation, and pollutant loading into local surface and groundwater. Implementation of INRMP projects would contribute to long-term, beneficial, cumulative impacts from enhancement and establishment of wetlands and protection of floodplain areas.

3.6 Infrastructure and Transportation

3.6.1 Definition of Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is entirely human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity for expansion are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this section include utilities and solid waste management. Utilities include electrical supply, communications, heating/cooling, liquid fuels, natural gas, sanitary sewer, potable water, stormwater, solid waste, airfield, roadways and parking, and access gates. The infrastructure information contained in this section provides a brief overview of each infrastructure component and its existing general condition at MacDill AFB.

3.6.2 Existing Conditions

The ROI for the analysis of effects on infrastructure and transportation comprises the installation and the adjacent off-installation area north of the installation boundary that provides access to the installation.

3.6.2.1 ELECTRICAL

MacDill AFB purchases its power from Tampa Electric Company (TECO). TECO provides two 35.2-megawatt (MW) feeders to the substation on the installation, which has five feeder circuits supplying 13.2 kilovolt (kV) of power throughout the installation. Based on current usage, approximately 12 MW of capacity remains available. Additionally, TECO operates an additional substation north of the installation near the Tanker Way Gate that increases capacity, resolves redundancy issues, and provides an additional 35.2 MW of power (MacDill AFB 2019a).

Electricity is distributed through both underground and overhead mains throughout the installation. The electrical distribution system is owned by MacDill AFB and is considered to be up-to-date and in excellent condition. Due to recent investments and sensitivity issues, the installation’s electrical system will not be privatized. MacDill AFB continuously implements energy conservation projects to meet federal requirements for reducing energy consumption. These projects help reduce demand while keeping the existing supply the same, reducing reliance on future electrical infrastructure development (MacDill AFB 2019a). Electrical infrastructure is present adjacent to the JCSE Joint Operations and Logistics Maintenance Facility, JCSE RUBB Facility Replacement, and Culvert Repair and Replacement: Bayshore Gate project areas. An underground electrical main tie-in is present along the airfield for the Apron Flood Lighting project.

3.6.2.2 COMMUNICATIONS

The existing communications infrastructure consists of underground copper cable (15 percent) and fiber optic cable (85 percent). The communications system includes one core router and seven support routers that serve 250 buildings on the installation. The system is robust and only 12 percent of the system is currently utilized. Utilization of the communications system will

increase with future mission growth. Approximately 10 gigabytes of capacity are available, but the current demand at MacDill AFB is 1.2 gigabytes (MacDill AFB 2019a).

The Consolidated Communications Facility, constructed in 2013, has plenty of capacity for future growth. The communications system is in good condition and is upgraded every 5 years. Overall, the communications system has plenty of available capacity to address future needs (MacDill AFB 2019a).

3.6.2.3 HEATING/COOLING

Heating and cooling systems at MacDill AFB are not centralized. One Centralized Utility Plant (CUP), which is operated by USCENTCOM, currently operates at approximately 50 percent of its existing capacity. The CUP is in excellent condition and receives preventative and routine maintenance on a regular basis. An Operating Support Facility featuring a CUP for USSOCOM facilities has been constructed and is operational to support USSOCOM facilities (MacDill AFB 2019a, 2024c).

MacDill AFB has upgraded existing heating and cooling systems in a majority of inhabited buildings on the installation. High performance HVAC systems are designed and installed on all new construction. High-efficiency HVAC systems have been added to most of the existing buildings on the installation and older systems have been updated with magnetic bearing chillers. MacDill AFB continues to upgrade heating and cooling systems in existing facilities with high-efficiency HVAC systems (MacDill AFB 2019a).

3.6.2.4 LIQUID FUELS

MacDill AFB receives, stores, and distributes aviation jet fuel (Jet-A) via pipeline and commercial truck delivery. The pipeline accounts for 98 percent of fuel delivery. The Defense Fuel Supply Point consists of three aboveground storage tanks (ASTs) with a total capacity of 6.9 million gallons. The petroleum, oils, and lubricants (POL) fuel system also consists of two ASTs that provide 2.4 million gallons of fuel to the Type III hydrant system on the installation. MacDill AFB is currently operating at 48 percent capacity of the POL fuel storage and Type III hydrant system. The installation's fuel distribution system is able to accommodate the current mission with ample capacity for growth (MacDill AFB 2019a).

The original Defense Fuel Supply Point bulk fuel storage facilities on the western portion of the installation were constructed in 1952 and the ASTs were refurbished in 1985. The two POL ASTs were constructed in 2004 and are in great condition. The Type III hydrant system is also in good condition (MacDill AFB 2019a). None of the proposed projects are within 1,000 feet of existing liquid fuels infrastructure, to include fuel hydrants, fuels control valves, fuel pipelines, or the fuels tank farm or would result in changes to or use of liquid fuels. Therefore, liquid fuels are not discussed further in this IDEA.

3.6.2.5 NATURAL GAS

Natural gas at MacDill AFB is provided by TECO-Peoples Gas, and the installation's natural gas distribution system is privatized through TECO-Peoples Gas. The natural gas distribution system provides natural gas to the main cantonment and housing areas, with more than 43,000 linear feet of piping throughout the installation and an additional 16,523 linear feet in the

housing areas. The natural gas distribution system is in good condition, with a capacity of 15.74 million cubic feet per month and a monthly demand of 2.884 million cubic feet. Due to the mild temperatures at MacDill AFB, natural gas demand is low (MacDill AFB 2019a). The natural gas distribution main and a couple distribution service lines provide natural gas to the existing JCSE facilities. The natural gas distribution main runs underneath the areas for the proposed Widen Zemke Avenue and Culvert Repair and Replacement: Bayshore Boulevard projects.

3.6.2.6 SANITARY SEWER

The water discharge and sewer collection systems at MacDill AFB are owned and operated by FGUA, and consist of sewer lines, lift stations, and a wastewater treatment plant (WWTP). The WWTP, located in the southeastern corner of the installation on Bayshore Drive, has a capacity of approximately 2 million gallons per day (mgd) and is permitted to treat up to 1.2 mgd, which is sufficient to handle the average demand of 0.6 mgd (MacDill AFB 2023). During periods of heavy rainfall, the peak demand of the wastewater system is 1.09 mgd. Effluent from the WWTP is pumped into a holding pond with a capacity of 4 million gallons. From the holding pond, the treated water is used to irrigate two golf courses at the Bay Palms Golf Complex to the north and south of the WWTP. During wet periods, surplus effluent can be pumped to a 10-acre restricted access spray field or a 20-million-gallon wet weather storage pond near the intersection of South Shore Avenue and Marina Bay Drive, just west of the golf complex. The wastewater discharge and sewer collection systems consist of more than 62,000 linear feet of piping, 60 lift stations, and the WWTP and are in good condition. Approximately 12,000 linear feet of piping and 60 maintenance holes have been recently replaced with additional improvements planned (MacDill AFB 2019a). Existing sanitary sewer lines run to the JCSE Joint Operations and Logistics Maintenance Facility, JCSE RUBB Facility Replacement, and Demolish Building 82 project areas. Additionally, a sanitary sewer main runs near the Southshore Avenue culvert.

3.6.2.7 POTABLE WATER

The potable water distribution system at MacDill AFB is privatized by FGUA, which obtains water from the city of Tampa. Potable water is sourced from the Tampa Bay Water's Aquifer Storage and Recovery system, groundwater, surface water, and desalinated seawater supplies. The potable water quality is very good, and the installation operates three chlorine booster stations that can treat domestic water with chlorine when needed (MacDill AFB 2019a)

Water is distributed throughout the installation via three potable water tie-ins to receive water, consisting of approximately 227,000 linear feet of piping. Two water towers for potable water storage exist at MacDill AFB, one in the housing area holds 250,000 gallons and another in Downtown MacDill holds 500,000 gallons. USCENTCOM also has a dedicated water storage tank at their facilities. The total capacity for delivery is 3.6 mgd, which is adequate for the installation's needs. MacDill AFB is currently working to improve the water distribution system by replacing the original cast iron pipes. While conditions have improved, the existing water distribution system is still considered degraded and in need of updating. Planning actions noted in the 2019 IDP include ensuring system effectiveness through scheduled replacement of aging water mains, hydrants, and valves, and continuing to improve water mains to facilitate improved water flow and water quality throughout the installation (MacDill AFB 2019a)

Currently, the installation has an adequate water supply with ample capacity to expand current and support new missions at MacDill AFB and has not experienced water shortages during peak demand. **Table 3-15** provides a summary of water supply and current use at the installation.

Table 3-15. Average and Peak Water Supply Demands

	Water Supply (Average mgd)	Water Demand (Average mgd)	Percent Headroom
Average Demand	3.6	1.1	70.8
Peak Demand	3.6	3.3	11

Source: MacDill AFB 2019a
Key: mgd – million gallons per day

3.6.2.8 STORMWATER

The stormwater discharge and collection system at MacDill AFB consists of drainage ditches, culverts, and storage ponds that connect to tidal creeks and canals or directly into the Tampa and Hillsborough Bays. The system includes 24.4 miles of culverts and 56.3 miles of open ditches and canals, with a total of five drainage basins. The installation receives an average of 48 inches of rainfall per year, which then either absorbs into the soil in undeveloped areas or flows off impervious surfaces into the stormwater drainage system. Stormwater runoff is treated on-installation and eventually discharged into Tampa or Hillsborough Bay (MacDill AFB 2019a, 2020b).

Surface water drainage on the installation flows from drainage basins (sub-watersheds) based on flow patterns and conveyance systems on MacDill AFB. The storm sewer system is permitted as an FDEP Phase II Municipal Separate Storm Sewer System and consists of inlets, drainage pipes, swales, and canals that support drainage areas that discharge to “internal” outfalls, defined as outfalls discharging into the installation’s Municipal Separate Storm Sewer System, and “final” outfalls, which discharge into Tampa or Hillsborough Bay. There are eight tidal canals located on MacDill AFB, six of which are final outfalls (MacDill AFB 2020b).

MacDill AFB operates under a Multi-Sector General Permit for Industrial Stormwater (MSGP; effective March 19, 2021 through March 18, 2026) (FDEP 2021). The stormwater discharge and collection system at MacDill AFB has been updated over the years; however, there are some areas that remain outdated. The problematic areas exist in the less developed portions of the installation and near the Munitions Storage Area along Golf Course Road. Construction projects are reviewed by the 6th Civil Engineer Squadron (CES)/Civil, Environmental, and Infrastructure Engineering (CEIE) to determine which stormwater pollution prevention measures should be implemented to maintain sediment and erosion control. Sites less than 1 acre are subject to the installation’s base-wide BMP, *BW-BMP-10 Sediment and Erosion Control*, but are not required to obtain any additional permits. Construction projects that would disturb one or more acre of land must adhere to the base-wide BMP and obtain coverage under a construction general permit for stormwater discharge from large and small construction activities, which is administered by the FDEP. Additionally, MacDill AFB must obtain a site-specific construction stormwater permit as well as develop a site-specific SWPPP. It is the responsibility of the

construction contractor to obtain this coverage. The 6 CES/CEIE oversees the contractor's sediment and erosion control efforts (MacDill AFB 2019a, 2020b).

3.6.2.9 SOLID WASTE

The MacDill AFB Integrated Solid Waste Management Program is managed by 6 CES/CEIE. The primary goal of the program is to effectively manage municipal solid waste (MSW) and construction and demolition (C&D) waste generated at the installation in order to: 1) cost-effectively reuse or recycle materials to the maximum extent possible in order to meet solid waste diversion goals; 2) protect human health and the environment; and 3) comply with applicable federal, state, local, and DAF regulations (MacDill AFB 2021b).

The MSW generated at MacDill AFB is collected and disposed of through contracted services. Six Nations provides pickup service for all MSW and recycling containers throughout the installation. The MSW is transported to an off-site waste-to-energy incinerator at the McKay Bay Waste-to-Energy Facility and recyclable items are transported off-site to Waste Management Recycle America in Tampa. MacDill AFB does not have an active on-site solid waste disposal landfill. Nine inactive solid waste disposal areas on the installation were investigated and remediated under the ERP (MacDill AFB 2021b).

C&D debris generated at MacDill AFB is managed in accordance with the Integrated Solid Waste Management Plan (ISWMP). Disposal and recycling of C&D debris occurs off-site. In accordance with the ISWMP, construction waste that should be recycled includes grubbing debris, dirt, and soil; gypsum board; paper and cardboard; wood products; brick and masonry; carpet and padding; plastics; aluminum; copper wiring; and mechanical and electrical products and equipment (MacDill AFB 2021b).

3.6.2.10 AIRFIELD

The MacDill AFB airfield pavements span approximately 1,355 acres and include the runway, paved overruns, parking and maintenance aprons, aircraft taxiways, and an arm/disarm pad. The installation's single runway, Runway 04/22, runs northeast to southwest, parallel to Taxiway G approximately 11,421 feet long and 151 feet wide. The main aircraft parking apron is connected by Taxiway K, which runs east and west, and Taxiway L, which runs northeast to southwest and intersects Taxiway K. Taxiway N originates at the same location as Taxiway L but runs northwest, becomes Taxiway F, and connects to Runway 04/22. There is an additional parking apron along Taxiway I. The general condition of a pavement is commonly indicated by a Pavement Condition Index (PCI). The overall condition of the airfield surfaces is in Good condition, though the PCI for individual segments ranges from good to serious, with 58 percent rated as good to satisfactory, 27 percent rated as fair, and 15 percent rated as poor or below. No pavement segments are rated as failing and a few segments have not been surveyed. Collectively, all active pavements have an area-weighted average PCI of 72, which is considered satisfactory (MacDill AFB 2021g). The DUC ramp is rated as satisfactory to fair, and the apron rating ranges from good to serious along the apron flood lighting project area.

3.6.2.11 ROADWAYS AND PARKING

Surrounding Area: The Dale Mabry Highway is the main north-south corridor on the peninsula with access to MacDill AFB and a main throughfare for the Tampa Bay area. The highway

extends from the Dale Mabry Gate, connects installation-related traffic to other major roadways, including U.S. Interstate 275 and Interstate 4, and merges with U.S. Highway 41 at its northern terminus. Three other north-south corridors, aside from Dale Mabry Highway, connect MacDill AFB to the greater Tampa area. These include, from east to west: Bayshore Boulevard, MacDill Avenue, and West Shore Boulevard (MacDill AFB 2019a).

The Hillsborough Area Regional Transit Authority provides the Tampa area with public transportation that includes a bus system, a bus-rapid transit system for longer trips, streetcar lines, and door-to-door paratransit service. The transit service provides local and express bus service to the installation (HART 2023). No rail facilities are present in or near the proposed project areas.

On-installation Transportation. The on-installation transportation system consists of primary, secondary, and tertiary roadways that connect with the off-installation road network through the four access gates. Primary roads include South Boundary Boulevard, Hangar Loop Drive, Florida Keys Avenue, Golf Course Avenue, Marina Bay Drive, Hillsborough Loop Drive, and North Boundary Boulevard. Secondary roads include Zemke Avenue, Tampa Point Boulevard, and Fortress Drive. Approximately 8 million SF of roadway surfaces occur throughout MacDill AFB. The installation has implemented traffic control measures at most of the signaled intersections, which has alleviated most traffic congestion problems on the installation. MacDill AFB employs a total of 19,475 personnel, many of whom transit to and from the installation daily. Hangar Loop Drive is the primary roadway, with access to parking areas near the proposed project areas. Parking in these areas is available in surface lots and considered adequate, with additional spaces planned for future construction. Additionally, MacDill AFB has a robust pedestrian network, with sidewalks at every roadside throughout most of the installation and crosswalks provided at convenient crossing locations (MacDill AFB 2019a).

3.6.2.12 ACCESS GATES

Vehicle access to the installation is through four access gates. The main gate on Dale Mabry Highway and two secondary gates on Bayshore Boulevard and MacDill Avenue provide access for government and personal vehicles. The fourth gate, the Tanker Way Gate, is used as the sole entry/exit point for large vehicles (e.g., contractor, delivery, and recreational) except for nights and weekends, when the main gate on Dale Mabry Highway is used. In addition, the Tanker Way Gate is used for inbound personal vehicle entry during morning hours. The Dale Mabry Gate has four lanes for entry into the installation and two lanes for exit. Most employees enter the installation at the Dale Mabry Gate, located in the north-central portion of the installation, because Dale Mabry Highway is a main thoroughfare for the Tampa area and the only major road leading onto the installation. The Bayshore Gate, located on the northwestern corner of the installation, and the MacDill Gate, which is located between the other two gates, each have just one lane for entry and one for exit. The Tanker Way Gate has one lane for entry and one for exit and is located at the western end of North Boundary Boulevard, west of the Dale Mabry Gate. These four gates process more than 12,000 vehicles per day with approximately 57 percent traveling through the Dale Mabry Gate. Traffic delays on MacDill AFB are limited primarily to the gates during peak hours (MacDill AFB 2019a, 2022d).

3.6.3 Environmental Consequences

Impacts on infrastructure and transportation are dependent on their potential for disruption or improvement of existing levels of service or utilization. Impacts may arise from additional needs for energy, potable water, sanitary sewer and wastewater systems, and transportation patterns and circulation. A proposed action would have significant impacts on infrastructure and transportation resources if any of the following were to occur:

- Exceeded capacity of a utility
- Long-term interruption of service to a utility
- Violations to permit conditions
- Violations to existing utility plans

3.6.3.1 PROPOSED ACTION

Electrical. Short-term, negligible to minor, adverse impacts on the electrical system would be expected due to potential service disruptions during construction for the Proposed Actions. Impacts on the electrical system would include potential disruptions during construction when requiring a tie-in/connection to existing electrical lines and disconnections where applicable. Connection to the installation's electrical system would be required for the Construct Bayshore Gate, JCSE Joint Operations and Logistics Maintenance Facility, JCSE RUBB Facility Replacement, and Apron Flood Lighting projects. Disconnection of existing electrical infrastructure would occur prior to the demolition of Building 82, and the demolition of Buildings 848, 860, 861, 863, 886, and 887 associated with the JCSE Joint Operations and Logistics Maintenance Facility project.

No long-term impacts on the electrical supply system would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional operations or personnel are included in any of the Proposed Actions, and, therefore, no additional demand on the electrical supply would occur. Additionally, the demolition of inefficient buildings (Buildings 82, 848, 860, 861, 863, 886, and 887) and replacement with new energy-efficient facilities would reduce demand in the operational phase.

Communications. Short-term, negligible to minor, adverse impacts on communications infrastructure would be expected. Impacts on communications infrastructure would include potential disruptions during construction when requiring a tie-in/connection to existing communications lines and disconnections where applicable. Connection to the installation's communications infrastructure would be required for the JCSE Joint Operations and Logistics Maintenance Facility, Construct Bayshore Gate, and JCSE RUBB Facility projects. Additionally, disconnection of the communications infrastructure would occur prior to demolition of Buildings 82, 848, 860, 861, 863, 886, and 887.

No long-term impacts on communications infrastructure would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional operations or personnel are included in any of the Proposed Actions, and therefore, no additional demand on the communications infrastructure would occur.

Heating/Cooling. No impacts on the USCENTCOM CUP or the USSOCOM Operating Support Facility would be expected. All of the buildings proposed for demolition have standalone HVAC systems and are not connected to the CUP. Additionally, the JCSE Joint Operations and Logistics Maintenance Facility, Bayshore Gate gatehouse, and JCSE RUBB Facility would have standalone HVAC systems and would not be connected to the CUP.

Natural Gas. Short-term, negligible to minor, adverse impacts on the natural gas system would be expected. Impacts on the natural gas system would include potential disruptions during construction when requiring a tie-in/connection to existing natural gas lines and disconnections where applicable. Connection to the installation's natural gas system would be required for the Construct Bayshore Gate, JCSE Joint Operations and Logistics Maintenance Facility, and JCSE RUBB Facility Replacement projects. Disconnection of existing natural gas infrastructure is expected prior to the demolition of Building 82, and the demolition of Buildings 848, 860, 861, 863, 886, and 887 associated with the JCSE Joint Operations and Logistics Maintenance Facility project.

No long-term impacts on the natural gas system would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional operations or personnel are included in any of the Proposed Actions; therefore, no additional demand on the natural gas system would occur. Additionally, the demolition of inefficient buildings (Buildings 82, 848, 860, 861, 863, 886, and 887) and replacement with new energy-efficient facilities would reduce demand in the operational phase.

Sanitary Sewer. Short-term, negligible to minor, adverse impacts on the sanitary sewer/wastewater system would be expected. Impacts on the sanitary sewer system would include potential disruptions during construction when requiring a tie-in/connection to existing sanitary sewer/wastewater lines and disconnections where applicable. Connection to the installation's sanitary sewer/wastewater system would be required for the JCSE Joint Operations and Logistics Maintenance Facility, JCSE RUBB Facility, and Construct Bayshore Gate projects. Additionally, disconnection of the sanitary sewer/wastewater system would occur prior to demolition of Buildings 82, 848, 860, 861, 863, 886, and 887.

No long-term impacts on the sanitary sewer/wastewater system would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional operations or personnel are included in any of the Proposed Actions; therefore, no additional demand on the sanitary sewer/wastewater system would occur.

Potable Water. Short-term, negligible to minor, adverse impacts on the potable water system would be expected. Impacts on the potable water system would include potential disruptions during construction when requiring a tie-in/connection to existing potable water lines and disconnections where applicable. Connection to the installation's potable water system would be required for the JCSE Joint Operations and Logistics Maintenance Facilities, JCSE RUBB Facility, and Construct Bayshore Gate projects. Additionally, disconnection of the potable water system would occur prior to Buildings 82, 848, 860, 861, 863, 886, and 887.

No long-term impacts on the potable water system would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional

operations or personnel are included in any of the Proposed Actions; therefore, no additional demand on the potable water system would occur.

Stormwater. Short- and long-term, negligible to minor, adverse impacts on the stormwater management system would be expected from potential increases in sedimentation, erosion, and impervious surface cover. During construction of the Proposed Actions, approximately 781,000 SF (17 acres) of surface area would be disturbed; however, this disturbance would not occur at the same time. Temporary disturbance of stormwater systems would occur during demolition and construction activities. Adverse impacts could be minimized through the implementation of BMPs, which would include installing temporary stormwater controls to minimize the volume and velocity of stormwater flow. The addition of impervious surface cover would also put stress on the stormwater management system at MacDill AFB. Under the Proposed Actions, approximately 24,400 SF (0.6 acre) of impervious surface cover would be added, primarily from the Construct Bayshore Gate, Widen Zemke Avenue, and the Apron Flood Lighting projects. Development of new stormwater drainage systems and upgrade of existing systems would be appropriately coordinated with the FDEP to ensure conformance to the installation's MSGP for stormwater discharge. Further, stormwater upgrades would be designed with consideration of UFC low impact development requirements, in accordance with EISA Section 438, to maintain and restore the natural hydrologic functions of the area.

Long-term, negligible to minor, beneficial impacts on the stormwater management system would be expected. The Culvert Repair and Replacement project would improve stormwater management and increase efficiency at MacDill AFB. Additionally, new infrastructure would include design and construction of new stormwater drainage systems for these facilities.

Solid Waste. Short-term, minor, adverse impacts on solid waste management would be expected.

Table 3-16 shows the anticipated amount of solid waste to be generated from each project under the Proposed Action. Solid waste generated from the proposed facility construction, infrastructure construction and repair, and demolition projects under the Proposed Action would consist of building materials such as solid pieces of concrete, metals (e.g., conduit, piping, and wiring), lumber, sheet rock, cement, and asphalt. To maximize landfill diversion rates, contractors would be required to recycle C&D debris in accordance with the installation's ISWMP and federal regulations. The contractor would dispose of nonrecyclable C&D debris at an off-site permitted landfill facility. Waste generated would be reused or recycled to the greatest extent possible.

No long-term impacts on solid waste management would be expected. Proposed projects include consolidation or replacement of existing facilities and operations. No additional operations or personnel are included in any of the Proposed Actions; therefore, no change in the volume of solid waste generation would occur.

Table 3-16. Amount of Solid Waste Generated from Projects under the Proposed Action

Project Name and Number	Square Footage	Waste Multiplier (pounds/SF)	Debris Generation	
			(pounds)	(tons)
JCSE Joint Operations and Logistics	132,000 (C)	4.34 (C)	572,880	286

Maintenance Facility (NVZR193704)	76,727 (D)	158 (D)	12,122,866	6,061
Bayshore Gate Construction (NVZR190031)	4,400 (C) 4,360 (D)	4.34 (C) 158 (D)	19,096 688,880	10 344
JCSE RUBB Facility Replacement (NVZR180048)	2,783 (D)	158 (D)	439,714	220
Zemke Avenue Widening (NVZR180060)	7,000 (PC)	1 (PC)	7,000	4
DUC Ramp Extension (NVR190077)	20,000 (PC)	1 (PC)	20,000	10
Building 82 Demolition (NVZR220042)	3,982 (D)	158 (D)	629,156	315
Total C&D Debris Generated (tons)				**7,250**

Source: USEPA 2009
Key: C – Construction; D – Demolition; PC – Pavement Construction; C&D – Construction and Demolition; SF – square foot; JCSE – Joint Communication Support Element; DUC – Deployed Unit Complex

Airfield. Short- and long-term, negligible to moderate, adverse and beneficial impacts on the airfield are expected. Short-term, negligible, adverse impacts are expected to occur during construction and installation for the Extend DUC Ramp and the Apron Flood Lighting projects. During construction, these projects may affect airfield operations. Extension of the DUC Ramp and installation of the apron flood lighting would involve the use of construction equipment such as front-end loaders, bulldozers, and excavators and construction activities would require restricted access for construction personnel to the area which could affect airfield operations.

Long-term, moderate, beneficial impacts on the airfield would be from improved safety measures and more support for mission readiness. The extended DUC ramp would allow for a larger area to accommodate newer aircraft that utilize the existing DUC ramp. The Apron Flood Lighting project would provide additional lighting on the airfield, create a more uniform lighting pattern, and maintain compliance with UFC 3-535-01, *Visual Air Navigation Facilities, With Change 4,* and AFI 32-1044, *Visual Air Navigation Systems*.

Roadways and Parking. Short-term, minor, adverse impacts on installation roadways would be expected from potential closures and traffic pattern alterations during construction and demolition activities. Road closures and traffic pattern alterations would be especially prominent at Bayshore Boulevard and Zemke Avenue for the Construct Bayshore Gate and Widen Zemke Avenue projects. Bayshore Boulevard and Zemke Avenue are considered to be perimeter and secondary roads, respectively. Traffic patterns during construction and demolition projects may increase congestion in some areas, but traffic would be diverted and rerouted in the most effective way possible. Parking is not expected to be impacted under the Proposed Action.

Long-term, minor to moderate, beneficial impacts on traffic would be expected during construction for the Construct Bayshore Gate and Widen Zemke Avenue projects. These projects would promote circulation throughout the western portion of the installation and improve overall traffic conditions.

Access Gates. Short-term, minor, adverse impacts on access gates are expected from potential closures and traffic congestion along Bayshore Boulevard, similar to those described for roadways. Construction activities for the Construct Bayshore Gate project would require temporary closure of the gate. This would divert traffic to the other entry gates on the installation and increase congestion at the gates, especially during peak hours.

Long-term, moderate, beneficial impacts could be expected at access gates from the Construct Bayshore Gate project. The Construct Bayshore Gate project would greatly improve the flow of traffic and vehicle queuing entering and exiting the installation. Additionally, the Constrict Bayshore Gate project would improve security at the entrance and improve reaction times.

3.6.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and mission support activities would continue to rely on the existing facilities and infrastructure. The existing facilities would continue to be inappropriately sized, and in some cases deteriorating or uninhabitable, and therefore insufficient to support current and future mission needs for the 6 ARW and MacDill AFB mission partners; would continue to degrade to failure and be insufficient to support existing and future mission needs, would continue to violate AT/FP and safety requirements, and traffic congestion on the installation would continue to impede operational efficiency on the installation. Therefore, continued long-term, minor to moderate, adverse impacts on infrastructure would be expected.

3.6.3.3 CUMULATIVE IMPACTS

Short-term, negligible to moderate, adverse, cumulative impacts on infrastructure and transportation could occur from the Proposed Action when combined with reasonably foreseeable actions. Should projects under the Proposed Action and reasonably foreseeable actions occur within similar timeframes and locations, short-term impacts on infrastructure and transportation could occur. If a certain utility is in high demand between multiple projects, it is possible for the system to experience unusual stress. Similarly, projects that require traffic closures or detours within a similar location and timeframe could noticeably increase traffic and congestion. Impacts could be minimized by implementing phased construction as needed.

Long-term, negligible to moderate, beneficial, cumulative impacts could be expected from the Proposed Action when combined with reasonably foreseeable actions from the overall improvement to the installation. The Proposed Action and reasonably foreseeable actions are aimed at improving efficiency, safety, and mission readiness at MacDill AFB.

3.7 Topography and Soils

3.7.1 Definition of Resource

3.7.1.1 TOPOGRAPHY

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. The geology of an area may include bedrock materials, mineral deposits, and fossil remains. Bedrock is relatively hard, consolidated rock beneath surface materials, such as soil or gravel, and can be made of most types of rock (e.g., granite, limestone, sandstone). Some bedrock structures may not be suitable to support infrastructure due to instability, such as heavily fractured bedrock or karst topography.

3.7.1.2 SOILS

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils are typically described in terms of their complex type, slope, and physical characteristics. Differences among soil types, in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential, affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

3.7.2 Existing Conditions

The ROI for the analysis of effects on topography and soils comprises the project areas, as shown in **Figure 2-1**, and the surrounding areas that may experience indirect effects from the Proposed Actions.

3.7.2.1 TOPOGRAPHY

The geologic features of MacDill AFB are consistent with the generally flat, sandy terrain of the surrounding area and the Pamlico Terrace, which rises gently from the coast to approximately 25 feet above mean sea level (MSL). Elevation on the installation ranges from sea level at the southern edge to approximately 15 feet above MSL in the northern portions; much of the installation is less than 5 feet above MSL (MacDill AFB 2022c). The topography within the project areas range between approximately 4 and 10 feet above MSL (USGS 2022a, 2022b).

3.7.2.2 SOILS

According to the *1989 Soil Survey of Hillsborough County, Florida*, there are eight soil series across the project areas at MacDill AFB. These soil series include Immokalee, Malabar, Myakka, Pomello, St. Augustine, Urban land, and Wabasso as the primary components. (USDA NRCS 1989). The Urban land primary component makes up 80.7 percent of the combined project areas, and five of the other primary soil components include an Urban land component (see **Table 3-17**).

Soils are classified as Urban Land where existing development has altered or obscured the original soils beyond identification (USDA NRCS 1989). Most of the soils within the proposed project areas at MacDill AFB are fill derived from dredging activities in surrounding areas that was used during installation construction to fill existing swamps and create stable construction surfaces (MacDill AFB 2021c). Surface cover in the project areas are currently a combination of pavement, buildings, and landscaped lawn.

Table 3-17. Soils within the Proposed Action Alternative Project Area at MacDill AFB

Mapping Unit	Slope	Characteristics[1]	Acreage of Project Area	Percent (%) of Project Area
Immokalee-Urban land complex	0 to 2 percent slopes	Consists of 50 percent Immokalee and similar soils, 40 percent Uban land, 10 percent minor components; Immokalee components have a depth to restrictive layer greater than 80 inches and are poorly drained with very high runoff and moderately high to high permeability; not hydric	1.0	1.0
Malabar fine sand	0 to 2 percent slopes	Consists of 85 percent Malabar and similar soils, and 15 percent minor components; Malabar components have a depth to restrictive layer greater than 80 inches and are poorly drained with very high runoff and high permeability; this soil is hydric	5.8	6.0
Myakka fine sand	0 to 2 percent slopes	Consists of 85 percent Myakka and similar soils, and 15 percent minor components; Myakka components have a depth to restrictive layer greater than 80 inches and are poorly drained with very high runoff and moderately high to high permeability; generally not hydric, although the minor component (Basinger) is a hydric soil	4.1	4.3
Myakka-Urban land complex	N/A	Consists of 50 percent Myakka and similar soils, 40 percent Urban land and 10 percent minor components; Myakka components have a depth to restrictive layer greater than 80 inches and are poorly drained with very high runoff and moderately high to high permeability; generally not hydric, although the minor component (Basinger) is a hydric soil	0.4	0.4
Pomello-Urban land complex	0 to 5 percent slopes	Consists of 45 percent Pomello and similar soils, 40 percent Urban land and 15 percent minor components; Myakka components have a depth to restrictive layer greater than 80 inches and are moderately well drained with negligible runoff high permeability; generally not hydric, although the minor component (Felda) is a hydric soil	5.9	6.2
St. Augustine-Urban Land Complex	N/A	Consists of 50 percent St. Augustine, 40 percent Urban Land, and 10 percent minor components; St. Augustine components have a depth to restrictive layer greater than 80 inches, and are somewhat poorly drained with very low runoff and high to very high permeability; generally not hydric, although the minor components (Kesson and Myakka) are hydric soils	0.9	0.9
Urban Land	0 to 2 percent slopes	85 percent or more of the surface is covered by impervious surfaces and artificially drained with 15 percent minor components; generally not hydric, although the minor components (Cypress lake and Brynwood) are hydric soils	77.9	80.7
Wabasso-Urban land complex	N/A	Consists of 50 percent Webasso, 35 percent Urban Land, and 15 percent minor components; Webasso components have a depth to restrictive layer greater than 80 inches, and are poorly drained with very high runoff and moderately low to moderately high permeability; generally not hydric, although the minor components (Malabar and Felda) are hydric soils	0.5	0.6

Sources: USDA NRCS 1989, 2024
Key: N/A – Not applicable
[1] The U.S. Department of Agriculture – Natural Resources Conservation Service does not rate Urban Land for soil characteristics such as water capacity or erosion potential.

Erosion is an ongoing issue on portions of MacDill AFB, particularly on the eastern shoreline of the installation where the Construct Bayshore Gate and Widen Zemke Avenue projects would occur. The installation has been implementing shoreline stabilization efforts since 2003 in an effort to combat continued shoreline erosion, including that associated with sea level rise under climate change (MacDill AFB 2022c).

3.7.3 Environmental Consequences

A proposed action could have significant impacts on topography and soils if any of the following were to occur:

- substantial soil erosion
- substantial changes in elevation
- substantial affects to or alteration of soil or function.

3.7.3.1 PROPOSED ACTION

Topography. Long-term, negligible, adverse impacts would be expected on the natural topography in the project areas as a result of site preparation (i.e., grading, excavating, and recontouring) and construction. Soil stabilization techniques would be implemented as part of site preparation during construction.

Soils. Short- and long-term, minor, adverse impacts on soils in the project areas would be expected under the Proposed Actions due to ground disturbance, and an increase in impervious surface and associated erosion and sedimentation.

Impervious surface would increase by approximately 24,400 SF, and approximately 781,000 acres of ground disturbance would occur. The primary impacts would include soil compaction, disturbance, and erosion. As described in **Section 3.7.2.2**, soil stabilization efforts for existing erosion issues continue at MacDill AFB. Additional erosion from construction, demolition, and renovation efforts could exacerbate this issue. In addition to ongoing erosion control methods, implementation of environmental protection measures and BMPs from project-specific and installation ESCPs and SWPPPs would be implemented to minimize adverse impacts on soils, including silt fencing, sediment traps, application of water to disturbed soils, and revegetation of disturbed areas with native plants.

Compaction of soils during construction activities would disturb and modify the soil structure. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would decline in disturbed areas and be eliminated in those areas within the footprints of new buildings, pavements, and roadways. Loss of soil structure due to compaction from foot and vehicle traffic could change drainage patterns. Impacts would be minimized through implementation of soil decompaction methods such as aeration. Site-specific geotechnical soil testing could be conducted prior to or during construction as required to determine if limitations relating to contamination exist and to determine appropriate environmental protection measures to be implemented to minimize adverse impacts.

3.7.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions discussed in **Section 3.7.2** would remain unchanged. Therefore, no impacts on topography and soils would be expected.

3.7.3.3 CUMULATIVE IMPACTS

The Proposed Actions would have short and long-term, negligible to minor, adverse impacts on topography and soils at MacDill AFB. If construction of any of the reasonably foreseeable actions identified in **Table 3-1** were to occur concurrently with any of the Proposed Actions, short-term, minor to moderate, adverse, cumulative impacts would be expected from ground disturbance, an increase in impervious surface, and associated erosion and sedimentation. The addition of impervious surfaces associated with the Fuels Operations Facility, LRS Vehicle Maintenance Complex, and the facility and infrastructure projects related to the KC-46A MOB 6 Beddown, and the Proposed Actions, would have long-term, minor to moderate, adverse, cumulative impacts on topography and soils at MacDill AFB due to increased stormwater runoff and associated erosion and sedimentation.

3.8 Cultural Resources

3.8.1 Definition of Resource

Cultural resources are historic sites, buildings, structures, objects, or districts considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural or engineering resources, and traditional cultural resources. Federal laws and EOs that pertain to cultural resources management include the NHPA (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). MacDill AFB is required to comply with DAF regulations and instructions, including AFMAN 32-7003, *Environmental Conservation*; and DAFI 90-2002, *Interactions with Federally Recognized Tribes*. The Integrated Cultural Resources Management Plan (ICRMP; MacDill AFB 2021c) is the guidance document for cultural resources at MacDill AFB for planning and proposed activities.

The NHPA defines historic properties as buildings, structures, sites, districts, or objects listed in or eligible for listing in the NRHP. Resources found significant under NRHP criteria may be considered eligible for listing in the NRHP. Historic properties are generally 50 years of age or older (i.e., considered historic age), are historically significant, and retain the majority, if not all, of seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association, which enables them to convey their historic significance.

Under Section 106 of the NHPA, federal agencies must take into account the effect of their undertakings on historic properties within the proposed undertaking's area of potential effects (APE). Federal agencies must assess the possible effects of the proposed undertaking on historic properties in consultation with the SHPO and other consulting or interested parties, including the public. The APE is defined as the geographic area or areas within which an

undertaking (project) may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE for the Proposed Actions includes the nine project areas for the subject facility construction, infrastructure construction and repair, and demolition projects.

3.8.2 Existing Conditions

The ROI for the analysis of effects on cultural resources is the same as the APE under Section 106 of the NHPA, as amended, described above in **Section 3.8.1**.

3.8.2.1 ARCHITECTURAL RESOURCES

The ICRMP summarizes the results of multiple architectural inventories that have been conducted on MacDill AFB since the first historic structures investigation at the installation was completed in 1993. Past architectural resources surveys at MacDill AFB have identified two historic districts and 28 facilities (buildings or structures) that are eligible for listing in the NRHP either as individual properties or contributing elements within a historic district. Thirteen structures have been determined individually eligible for listing in the NRHP and 15 are considered contributing resources.

One of the nine project areas overlaps a historic property: the Apron Flood Lighting project area (one of the nine component areas of the APE) overlaps the southwestern edge of the NRHP-eligible MacDill Field Historic District (see **Figure 3-4**). Previous cultural resources surveys performed in 1993 and 1994 at MacDill AFB identified the MacDill Field Historic District. In 1993, the Florida Division of Historical Resources, which serves as the SHPO, concurred with the recommendation that five hangars (Hangars 1, 2, 3, 4, and 5) built in 1941 were individually eligible for listing in the NRHP under Criterion A for their association with the World War II training effort and Criterion C for their Art Deco design details. The five hangars were identified as the focal point of the MacDill Field Historic District, which also includes associated buildings and structures. In 1994, a total of 39 contributing resources were identified in the MacDill Field Historic District, in addition to Hangars 1, 2, 3, 4, and 5. A total of 22 of the contributing resources identified in 1994 were demolished between 1996 and 2020. The district boundaries were revised in 2011 in consultation with the Florida Division of Historical Resources, due to the multiple demolitions on the periphery of the original district boundaries (MacDill AFB 2021c).

The MacDill Field Historic District currently comprises 22 contributing resources (Hangars 1, 2, 3, 4, and 5, and 17 support buildings/structures) and 14 non-contributing resources. The proposed undertaking would not require alterations to any contributing or non-contributing resources within the MacDill Field Historic District. The proposed apron flood lighting would be installed on the southwestern edge of the district, along the runway, in an area immediately adjacent to Hangars 3, 4, and 5, which are considered contributing to the district and are each individually eligible for listing in the NRHP.

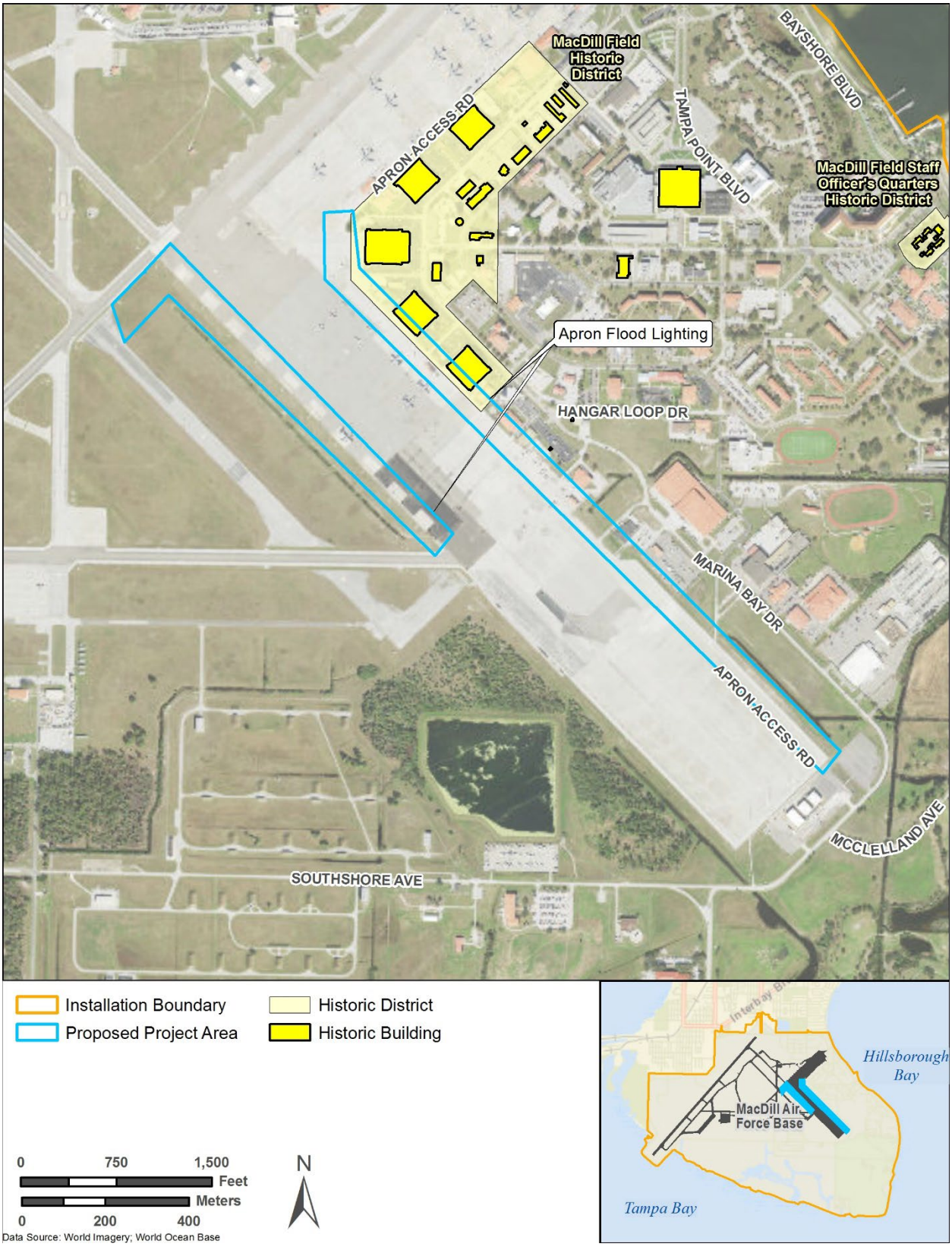

Figure 3-4. Historic Resources near the Proposed Project Areas

3.8.2.2 ARCHAEOLOGICAL RESOURCES

The ICRMP for MacDill AFB is the guidance document for considering archaeological resources during planning and implementing proposed activities at the installation. The ICRMP summarizes the results of the archaeological studies that have taken place at MacDill AFB, including two installation-wide studies conducted in 1986 and 2017–2019. Archaeological surveys at MacDill AFB have identified 50 archaeological sites. Of these 50 archaeological sites, 41 are considered not eligible for listing in the NRHP; 3 have been determined eligible for listing in the NRHP; and 6 require additional evaluation to determine their NRHP eligibility. One of the NRHP-eligible archaeological sites contains ancestral remains (see below for more information). None of the previously identified archaeological sites as currently delineated are located in the APE and, as such, no ground disturbing activities would occur within any known archaeological sites under the Proposed Actions.

3.8.2.3 TRADITIONAL RESOURCES

MacDill AFB regularly consults with four federally recognized Native American tribes with ancestral ties to the installation lands as part of the NEPA and Section 106 processes. Those tribes are the Seminole Tribe of Florida, Miccosukee Tribe of Indians of Florida, Seminole Nation of Oklahoma, and Muscogee (Creek) Nation. MacDill AFB is consulting with these tribes for the Proposed Actions at MacDill AFB (see **Appendix A**).

Ancestral remains have been found at two locations at MacDill AFB (MacDill AFB 2021c). One of those locations is within the boundaries of an archaeological site determined NRHP-eligible under Criterion D; however, the site has not been evaluated for significance as a Traditional Cultural Property. The known locations of ancestral remains at MacDill AFB are outside the APE, and no ground disturbing activities would occur near those sites under the Proposed Actions. No other tribal sacred sites or properties of traditional religious or cultural importance have been identified on MacDill AFB during previous consultations.

3.8.3 Environmental Consequences

Under Section 106 of the NHPA and its implementing regulations, an adverse effect is found when an undertaking (or action) may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for NRHP eligibility in a manner that would diminish the property's historic integrity of location, setting, feeling, association, design, materials, or workmanship. Examples of adverse effects on cultural resources under Section 106 can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or auditory elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

Adverse effects determined under Section 106 may or may not be considered significant impacts under NEPA. Considerations include the type, duration, and severity of the impacts as well as mitigation measures developed through Section 106 consultation. Impacts on historic properties may be considered significant if they would result in the loss of the property's NRHP

eligibility, usually by compromising the property's historic integrity, which is the ability of a property to convey its significance.

3.8.3.1 PROPOSED ACTION

Architectural Resources. The Apron Flood Lighting project area is the only one of the nine areas comprising the APE that include a known historic property. The project would involve installation of apron flood lighting along the eastern and western edges of the south apron at the airfield. The easternmost component of the Apron Flood Lighting project area slightly overlaps the southwestern boundary of the MacDill Field Historic District adjacent to Hangars 3, 4 and 5, which are all individually eligible for listing in the NRHP and considered contributing elements to the historic district. The Proposed Action involves installation of new flood lighting along the apron west of the historic district and would not require alterations to contributing elements of the historic district. The introduction of new lighting would introduce a minor infrastructure element to the setting of the MacDill Field Historic District, historically part of an active airfield, but would not impact the integrity of the MacDill Field Historic District or Hangars 3, 4, and 5, or their ability to convey their historic significance under Criterion A and/or C. Therefore, the Apron Flood Lighting project would not result in an adverse effect on historic properties under Section 106 of the NHPA.

Under NEPA, short-term, negligible, adverse impacts on historic properties would occur and include temporary atmospheric (visual, noise, and vibration) impacts as a result of construction activities. The presence of new flood lighting would pose long-term, negligible, adverse impacts on the historic viewshed. Consultation with the Florida SHPO, other identified consulting parties, and federally recognized Tribes under Section 106 of the NHPA is ongoing. Copies of correspondences received for this consultation effort will be provided in **Appendix A**.

Archaeological Resources. No known archaeological resources occur within the APE for the proposed projects. Therefore, the Proposed Actions would have no impacts on known archaeological resources. However, it should be noted that an NRHP-eligible archaeological site is located in the vicinity of the Northern Gate project area; the closest portion of the site as currently delineated is approximately 65 feet east of the APE in this area. Should any inadvertent discovery occur during construction or demolition, the SOPs for inadvertent discoveries of archaeological resources outlined in the installation's ICRMP would be implemented.

Traditional Resources. No known traditional cultural resources or sacred sites have been identified within the APE through consultation with the tribes. The known locations of ancestral remains at MacDill AFB are outside of the APE and would not be affected by the Proposed Actions. The DAF is continuing to consult with the federally recognized tribes over the course of the Section 106 and NEPA processes.

3.8.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions described in **Section 3.8.2** would remain unchanged. Therefore, no impacts on cultural resources would occur.

3.8.3.3 CUMULATIVE IMPACTS

The reasonably foreseeable actions identified in **Table 3-1** that have the potential to interact with the Proposed Actions to impact cultural resources consist of the installation projects. Those reasonably foreseeable actions would require ground-disturbing activities and/or introduce new buildings and/or structures to the installation that could result in visual impacts on historic properties. The potential for adverse effects under Section 106 would be analyzed for each individual project.

Given the extent of archaeological surveys previously completed on MacDill AFB and that no archaeological resources are in the APE, it is likely that potential adverse effects under Section 106 would be specific to architectural resources and could be successfully mitigated in consultation with the Florida SHPO through the development and implementation of an agreement document. The Proposed Actions would contribute negligibly (at most) with the other identified reasonably foreseeable actions that would, together, result in long-term, minor to moderate, adverse, cumulative effects on cultural resources at MacDill AFB under NEPA.

3.9 Hazardous Materials and Wastes

3.9.1 Definition of Resource

3.9.1.1 HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS

Hazardous materials are defined by 49 CFR 171.8 as hazardous substances, wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.01), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173.

Petroleum products include crude oil or any derivative thereof, such as gasoline, diesel, or propane. They are considered hazardous materials because they present health hazards to users in the event of incidental releases or extended exposure to their vapors.

3.9.1.2 HAZARDOUS AND PETROLEUM WASTES

Hazardous wastes are defined by RCRA at 42 USC Section 6903(5) as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.”

Certain types of common hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and the standards for managing them are established in 40 CFR 273. Wastes covered under the universal waste standards include batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans.

3.9.1.3 ENVIRONMENTAL RESTORATION PROGRAM

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governs response or cleanup actions to address releases of hazardous substances, pollutants, and contaminants into the environment. Congress formally established the Defense ERP in 1986 to provide for cleanup of DoD property at active installations, Base Realignment and Closure installations, and formerly used defense sites throughout the U.S. and its territories. The two major restoration programs under the ERP are the Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP). The IRP addresses contaminated sites, while the MMRP addresses nonoperational military ranges and other sites suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. Each site is investigated, and appropriate remedial actions are taken under the supervisions of applicable federal and state regulatory programs. When no further action is granted for a given site, the site is closed, and it no longer represents a threat to human health.

3.9.1.4 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

DoD has identified certain PFAS as emerging contaminants of concern that have affected DAF installations. PFAS are a class of synthetic compounds that possess a chemical structure that gives them unique properties, including thermal stability and the ability to repel both water and oil. This class of chemicals was developed in the 1940s and includes the chemicals perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), perfluorobutanesulfonic acid (PFBS), perfluorononanoic acid, and perfluorohexane sulfonate. Aqueous film-forming foam (AFFF) containing PFAS was developed in the early 1960s and used at airports, municipal fire stations, petroleum facilities, and in other industries in the United States to hydrocarbon-based fires effectively. DAF began using AFFF containing PFAS as a firefighting agent to extinguish petroleum fires in the 1970s. Firefighters at military installations regularly used AFFF in emergencies or were trained with AFFF in an unconfined manner. As awareness of PFAS-related health risks has increased, DAF has limited the use of PFAS at its installations and continues to investigate and mitigate PFAS-related environmental impacts under CERCLA. USEPA finalized a National Primary Drinking Water Regulation for PFAS on April 10, 2024, creating Maximum Content Levels for six PFAS compounds (USEPA 2024b).

3.9.1.5 TOXIC SUBSTANCES

Toxic substances are substances that might pose a risk to human health and are addressed separately from hazardous materials and hazardous wastes. Toxic substances include asbestos-containing materials (ACM), lead-based paint (LBP), and polychlorinated biphenyls (PCB), all of which are typically found in buildings and utilities infrastructure.

Asbestos is regulated by USEPA under the CAA, Toxic Substances Control Act, and CERCLA. The USEPA has established that any material containing more than one percent asbestos by weight is considered an ACM. USEPA has implemented several bans on various ACMs between 1973 and 1990, so ACMs are most likely found in older buildings (i.e., constructed before 1990). LBP was commonly used prior to its ban in 1978; therefore, buildings constructed prior to 1978 may contain LBP. PCBs are man-made chemicals that persist in the environment and were widely used in building materials (e.g., caulk) and electrical products prior to 1979. Structures constructed prior to 1979 potentially include PCB-containing building materials.

3.9.1.6 RADON

Radon is a naturally occurring odorless and colorless radioactive gas found in soils and rocks that can lead to the development of lung cancer. Radon tends to accumulate in enclosed spaces, usually those that are below ground and poorly ventilated (e.g., basements). USEPA established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences, where radon levels above this amount are considered a health risk to occupants.

3.9.2 Existing Conditions

The ROI for the analysis of effects on hazardous materials and waste comprises the project areas, as shown in **Figure 2-1**.

3.9.2.1 HAZARDOUS MATERIALS AND PETROLEUM PRODUCTS

MacDill AFB stores and uses hazardous materials and petroleum products such as liquid fuel, organic solvents, freon, paints and paint thinners, oils, lubricants, compressed gases, pesticides and herbicides, nitrates, and chlorine. The use and storage of hazardous materials is evaluated, authorized, and tracked through the installation's Hazardous Materials Program (MacDill AFB 2019a, 2021d). The MacDill AFB SWPPP specifies how installation personnel prevent discharges to stormwater from industrial operations. The SWPPP contains procedures to minimize the risk of industrial stormwater pollution in drainage areas within the installation boundaries (MacDill AFB 2020b). The MacDill AFB Spill Prevention, Control, and Countermeasure (SPCC) Plan provides provisions for oil spill prevention based on the types and quantities of petroleum substances present and the conditions of storage and use. The SPCC Plan provides oil spill prevention measures associated with accidental releases (MacDill AFB 2021e). Two ASTs associated with generators are present in the small parking area between Marina Bay Drive and Building 861. Hazardous materials are stored in Building 861 and an oil/water separator (OWS) is on the northern side of Building 860 (MacDill AFB 2020b, 2021e). Buildings 860 and 861 are proposed for demolition under the JCSE Joint Operations and Logistics Maintenance Facility project.

3.9.2.2 HAZARDOUS AND PETROLEUM WASTES

The installation's Hazardous Waste Management Plan (HWMP) outlines procedures and responsibilities for the management of hazardous waste on the installation. MacDill AFB is a RCRA Large Quantity Generator (USEPA identification number FL6570024582) and a Universal Waste handler for bulbs and batteries. RCRA Large Quantity Generators generate 1,000 kilograms or more of hazardous waste per month, or more than one kilogram of acutely hazardous waste per month. Hazardous wastes generated at the installation include solvents, fuels, lubricants, stripping materials, waste oils, waste paint-related materials, and other hazardous waste materials. Hazardous waste is stored at the 90-day accumulation site and at multiple satellite points across the installation. The waste is picked up by certified contractors within 90 days and much of the waste is recycled. There are no hazardous or petroleum waste storage areas within or immediately adjacent to the buildings proposed for demolition under the Proposed Actions. A hazardous waste Initial Accumulation Point is present on the southwestern corner of Building 862. Additionally, a used oil AST is located in Building 862 (MacDill AFB 2021f, 2019a).

3.9.2.3 ENVIRONMENTAL RESTORATION PROGRAM

There are 71 IRP sites and 14 MMRP sites present on the installation. Of the 71 IRP sites, 43 have been granted no further action, 2 are under cleanup, 10 are under study, and 16 are under long-term management. These sites include known or suspected soil and groundwater contamination associated with landfills, OWS, drainage areas, septic systems, fire training areas, and spill areas. Of the 14 MMRP sites, 9 are closed, 3 are under study, and 2 are under long-term management (MacDill AFB 2024d). **Figure 3-5** presents the active IRP and MMRP on the installation. There are no active MMRP sites within or adjacent to the proposed project areas; therefore, MMRP will not be discussed further in this IDEA. Groundwater monitoring wells associated with IRP Sites SS061 and SS076 are in close proximity to some of the proposed project areas. The northern portion of the Construct Bayshore Gate project is approximately 78 feet north of a groundwater well associated with SS061. The Widen Zemke Avenue project is approximately 50 feet north of a groundwater well associated with SS061. The Apron Flood Lighting project area includes a groundwater well associated with SS076 (AFCEC 2023a).

Table 3-18 provides the site information for IRP sites that occur within or adjacent to the project areas.

Table 3-18. IRP Sites Within or Adjacent to the Project Areas

IRP Site Name	Description	Relationship to Proposed Actions
LF002, Former Landfill at the Golf Course	The site consists of approximately 11.3 acres. The former landfill received concrete rubble and general refuse from approximately 1940 to 1950 and trees killed during a frost in 1965 or 1966. No known industrial or hazardous wastes were disposed of at LF002. At deactivation, the landfill was covered with native soil and graded level. In 2006, implementation of land use controls (LUCs) with groundwater use restrictions was selected as the site remedy. LUC inspections are conducted annually (AFCEC 2023a).	LF002 is approximately 0.16 mile southeast of the Apron Flood Lighting project area.
LF005, Former Landfill at the Civil Engineering Washrack	The site consists of approximately 8.9 acres. Due to major industrial activities at the time, it is possible industrial or hazardous wastes could have been disposed of at the landfill. Operations may have included open burning of rubbish, which was discontinued in the mid-1960s. No written documentation exists about specific materials or volumes deposited in the landfill. At deactivation, the landfill was covered with native soil. In 2007, the area was fenced, topped with 3-strand barbed wire, and signs were posted warning of potential hazards at the site. In 2007, monitored natural attenuation for groundwater, groundwater use restrictions, surface water monitoring, and nonresidential LUCs were selected as the site remedy. LUC	LF005 is approximately 0.04 mile southwest of the Culvert Repair and Replacement: Southshore Avenue project area.

IRP Site Name	Description	Relationship to Proposed Actions
	inspections are conducted annually (AFCEC 2023a).	
LF012, Former Sludge Disposal Area	The site consists of approximately 170 acres. Beginning in 1975, the area was used to dispose of sludge from sewage treatment. The sludge was described mostly as domestic sludge with possible small quantities of industrial wastes that may have been treated with OWSs installed in 1970. The OWSs were connected to the sanitary sewer. No written documentation exists that hazardous wastes were disposed of within the sludge. In 2007, monitored natural attenuation for groundwater, groundwater use restrictions, and nonresidential LUCs for soils were selected as the site remedy. Groundwater is sampled every 5 years and LUC inspections are conducted annually (AFCEC 2023a).	LF012 is approximately 0.07 mile west of the Apron Flood Lighting project area and 0.10 mile north of the Extend DUC Ramp project area.
SS035, OWS at Buildings 518 and 552	The site consists of an aircraft washrack and OWS. In 1967, an OWS that discharged to the sanitary sewer system was installed; however, prior to 1967 the washrack discharged directly to the ground. Building 533 was constructed over a portion of the northern washrack in the 1980s, and the northern washrack has not been used since that time. The southern washrack was rehabilitated in the 1990s and is used to wash transient military aircraft. In 2008, LUCs with groundwater use restrictions, monitored natural attenuation for groundwater, excavation and disposal of contaminated sediment and soils, and LUCs for contaminated soils left in place with concentrations above soil cleanup target levels but below approved alternative cleanup target levels were selected as the site remedy. Based on the results of the 2013 sampling events, groundwater monitoring was discontinued. LUC inspections are conducted annually (AFCEC 2023a).	SS035 overlaps the southwestern portion of Widen Zemke Avenue project area and is 0.10 mile west of the Bayshore Boulevard Culvert project area.
SS061, Chlorinated Solvent Plume	The site consists of a contaminated groundwater plume near the northeastern corner of the installation. The plume primarily exists in the basal portion of the surficial aquifer system, approximately 10 to 30 feet below the ground surface. The site is used to maintain, fuel, and operate cargo aircraft and to operate scientific observation equipment. Groundwater plumes from several other IRP sites have been incorporated into the SS061 groundwater plume. In 2007, monitored natural attenuation with institutional controls was selected as the site remedy. Overall, chlorinated VOC concentrations have continued to decrease. With concurrence from FDEP, groundwater is	SS061 is within the Construct Bayshore Gate, Bayshore Boulevard Culvert, and Widen Zemke Avenue project areas.

IRP Site Name	Description	Relationship to Proposed Actions
	sampled every 1 to 2 years, dependent on the well and past results, and LUC inspections are conducted annually (AFCEC 2023a).	
SS076, Flightline Hangars	The site consists of the area surrounding the five primary aircraft hangars. In 2007, excavation of selected areas of contaminated soil from Hangars 2 and 4, monitored natural attenuation of groundwater, and implementation of LUCs with groundwater use restrictions were selected as the site remedy. Historical and current groundwater results indicate that vinyl chloride continues to attenuate, and the overall plume size continues to decrease. Groundwater is sampled and LUC inspections are conducted annually (AFCEC 2023a).	SS076 overlaps a portion of the Apron Flood Lighting project area.
ST025, Detachment 1 (Facility 82/83) Former ASTs	The site consists of approximately 15.8 acres and was an active missile warning facility used from 1960 to 1985. Diesel fuel was pumped from three ASTs through subsurface piping to generators in Building 83. The ASTs were removed in February 1991. An abandoned UST was possibly present in the area south of Building 82. LUCs with groundwater use restrictions were implemented in 2014. A Remedial Action Plan to treat residual groundwater contamination consisting of naphthalene and chlorinated VOCs was approved by FDEP in October 2022. Remediation will be followed by post active remediation monitoring. LUC inspections are conducted annually (AFCEC 2023a, FDEP 2022b).	Although the Demolish Building 82 project area overlaps the site, the project area does not overlap with remediation efforts for the site.
ST057/PH75, Flightline Fueling System Pumphouse 75.	The site is a component of the Flightline Fueling System consisting of a pumphouse structure on a concrete slab that partially covered 20 50,000-gallon USTs. In 2009, the pumphouse was demolished and the USTs were removed, but the associated underground fuel piping remained. A Remedial Action Plan to treat VOC contamination in groundwater was approved by FDEP in May 2023. Remediation will be followed by post active remediation monitoring. LUC inspections are conducted annually (AFCEC 2023a, FDEP 2023c).	The site is 0.07 mile north of the Apron Flood Lighting project area.

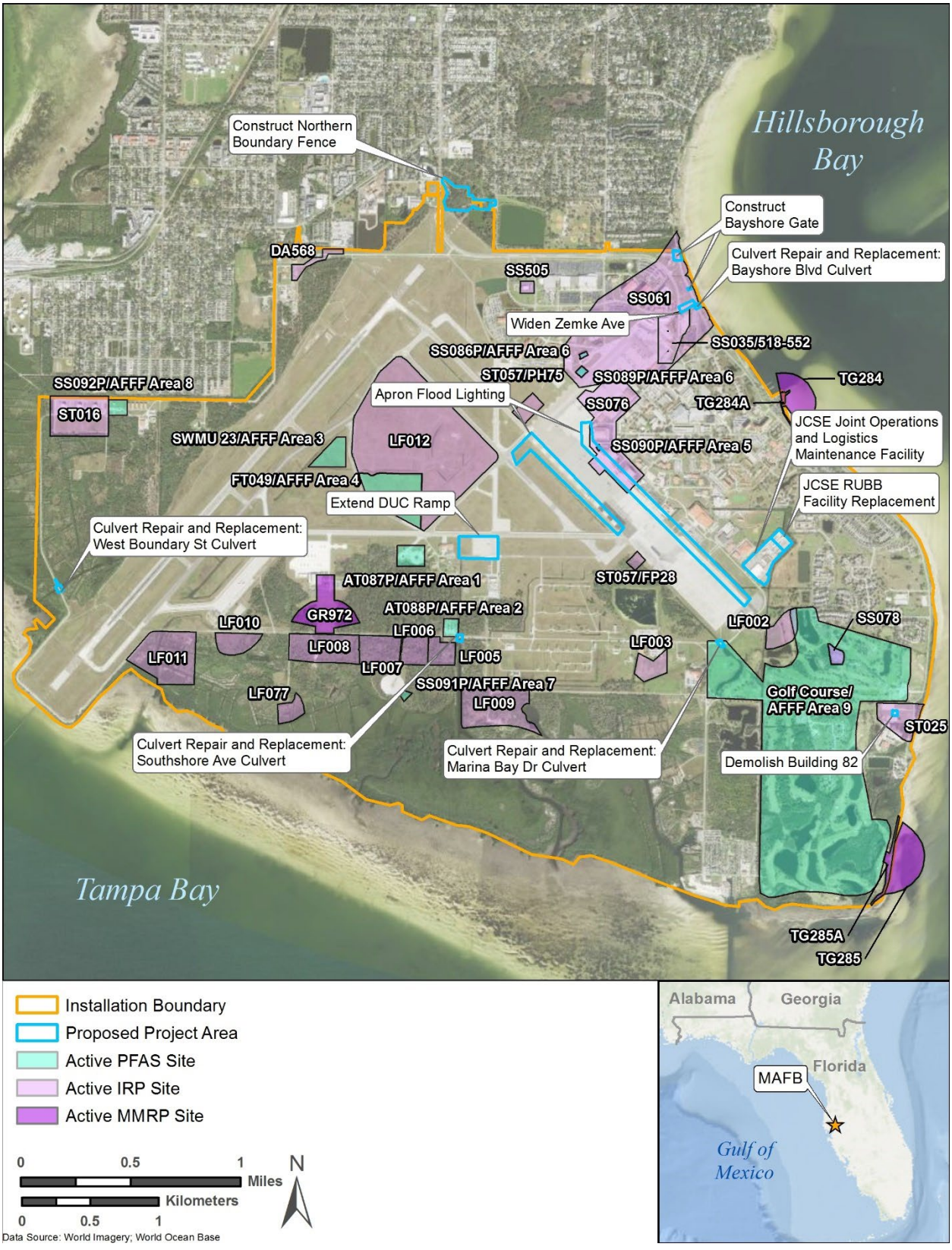

Figure 3-5. Active IRP, MMRP, and PFAS Sites on MacDill AFB

3.9.2.4 PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

There are nine active PFAS sites, identified as AFFF areas, on MacDill AFB (see **Figure 3-5**). **Table 3-19** provides the site information for the PFAS sites that occur within or adjacent to the project areas. The PFAS RI is underway for all sites to develop a comprehensive understanding of the vertical and lateral extent of PFAS contamination in soil, groundwater, sediment, and surface water resulting from past AFFF use.

Table 3-19. PFAS Sites Within or Adjacent to the Project Areas

PFAS Site	Description	Relationship to Proposed Actions
AFFF Area 1/AT087P, Fire Training Area	The site includes the current Fire Training Area and the only active fire station on the installation and consists of a lined burn pit that contains a mock aircraft used for quarterly fire training. The lined pit is surrounded by a circular concrete pad and has been in operation since 2001. Approximately 80 gallons of AFFF are released during each test. During the 2017 Site Inspection (SI), surface and subsurface soil and groundwater samples were collected. PFOS, PFOA, and PFBS were detected below regional screening levels (RSLs) in the soil samples, and PFOS, PFOA, and PFOS+PFOA were detected above USEPA detection levels and PFBS was detected below the USEPA RSL in the groundwater samples (MacDill AFB 2018, AFCEC 2023b).	The site is 850 feet west of the Extend DUC Ramp project area.
AFFF Area 2/AT088P, Facility 1188 (Former Fire Training Area)	The site consists of a former lined burn pit, vehicle training area, and fire training tower. Approximately 50,000 gallons of AFFF was used for fire training activities from 1987 to 2001. During the 2017 SI, surface and subsurface soil samples and groundwater samples were collected. PFOS, PFOA, and PFBS were detected below RSLs in the soil samples, and PFOS, PFOA, and PFOS+PFOA were detected above the USEPA detection levels and PFBS was detected below the USEPA RSL in the groundwater samples (MacDill AFB 2018, AFCEC 2023b).	The site overlaps the northwestern corner of the Culvert Repair and Replacement: Southshore Avenue project area.
AFFF Area 5/SS090P, Building 19 (Former Fire Station)	The site consists of an area where small amounts of AFFF were frequently discharged to the asphalt surface in a covered area north of the former fire station during fire truck filling operations from approximately 1970 to 2005. AFFF was also released at the washrack during fire truck washing. During the 2017 SI, surface and subsurface soils samples and groundwater samples were collected. PFOS and PFOA were detected below the RSL in the soil samples, and PFOS, PFOA, and PFOS+PFOA were detected above the USEPA detection levels and PFBS was detected below	The site overlaps a small portion of the Apron Flood Lighting project area.

PFAS Site	Description	Relationship to Proposed Actions
	the USEPA RSL in the groundwater samples (MacDill AFB 2018, AFCEC 2023b).	
AFFF Area 9, Golf Course	Liquid effluent from the wastewater treatment plant, which potentially contained AFFF in the waste stream from Facility 1188, Building 1065, and the Building 19 washrack, was applied for irrigation at the golf course. During the 2017 SI, groundwater samples were collected. PFOS and PFOS+PFOA were detected above the USEPA detection levels, and PFBS was detected below the USEPA RSL in all five groundwater wells sampled. PFOA was detected above the USEPA detection levels in three of the groundwater wells sampled and below the USEPA detection levels in two of the groundwater wells sampled (MacDill AFB 2018, AFCEC 2023b).	The site is within the Culvert Repair and Replacement: Marina Bay Drive project area.

Key: SI – Site Inspection; AFFF – aqueous film-forming foam; PFOS – perfluorooctane sulfonate; PFOA – perfluorooctanoic acid; PFBS – perfluorobutanesulfonic acid; RSL – regional screening level; DUC – Deployed Unit Complex; USEPA – United States Environmental Protection Agency

3.9.2.5 TOXIC SUBSTANCES

The Asbestos Management and Operations Plan (AMOP), which is updated annually, outlines how asbestos-related projects are handled on the installation. The AMOP assigns responsibilities, establishes inspection and repair capabilities, and provides repair procedures and personnel protection instructions (MacDill AFB 2020c). Of the facilities proposed for demolition under the Proposed Actions, Building 82 was constructed in 1954, and Buildings 860, 861, and 863 were constructed in the early 1970s; therefore, these facilities may contain ACM, LBP, and PCBs. Buildings 848, 886, and 887 were constructed in 1982; therefore, these facilities may contain ACM.

3.9.2.6 RADON

USEPA classifies Hillsborough County, Florida, as Radon Zone 2. Counties in Zone 2 have a predicted average indoor radon screen level between 2 and 4 pCi/L (USEPA 2024c).

3.9.3 Environmental Consequences

A proposed action would have significant impacts on hazardous materials and waste if any of the following were to occur:

- noncompliance with applicable federal or state regulations
- an increase in the amounts generated or procured beyond current management procedures, permits, and capacities
- disturbance to or creation of contaminated sites, resulting in negative impacts on human health or the environment
- a proposed action makes it substantially more difficult or costly to remediate existing contaminated sites

3.9.3.1 PROPOSED ACTION

Hazardous Materials and Petroleum Products. Short- and long-term, negligible to minor, adverse impacts on hazardous materials management would occur from the use and storage of hazardous materials and petroleum products during construction, renovation, demolition, and operations under the Proposed Actions.

Short-term, negligible to minor, adverse impacts on hazardous materials management would occur from the use of hazardous materials and petroleum products during construction and demolition under the Proposed Actions. Additionally, hazardous materials stored in Building 861 would be temporarily relocated prior to demolition of the building. Hazardous materials that could be used include paints, solvents, preservatives, welding gas, and sealants. Hydraulic fluids and petroleum products, such as gasoline, diesel, and oils, would be used by vehicles and heavy equipment supporting facility construction and demolition. Petroleum products, such as diesel and gasoline, would be stored onsite in ASTs. All hazardous materials and petroleum products used during construction would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with applicable regulations to minimize the potential for a release. Should hazardous materials or petroleum products be released into the environment, cleanup would be conducted in accordance with the installation's SPCC Plan. All construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed. All temporary ASTs storing diesel or gasoline for construction vehicles and heavy equipment would be removed from the project areas upon completion of construction activities.

Long-term, negligible, adverse impacts on hazardous materials management would occur from the operation and maintenance of the new facilities. Operation and maintenance of the new JCSE RUBB Facility could require the use and storage of hazardous materials and petroleum products in the associated warehouses, storage spaces, and deployment staging areas such as paints, lubricants, oils, pesticides, and herbicides. Additionally, it is anticipated that the hazardous materials removed from Building 861 prior to its demolition would be relocated to the new JCSE Joint Operations and Logistics Maintenance Facility. Use, storage, and management of these materials would be conducted in accordance with the installation's SWPPP and SPCC Plan, and federal, state, and local regulations.

Hazardous and Petroleum Wastes. Short- and long-term, negligible to minor, adverse impacts on hazardous waste management would occur from the generation of hazardous and petroleum wastes during construction, renovation, demolition, and operations under the Proposed Actions.

Short-term, negligible to minor, adverse impacts on hazardous waste management would occur from the generation of hazardous and petroleum wastes during construction and demolition under the Proposed Actions. Demolition under the Proposed Actions would generate negligible to minor quantities of hazardous and universal wastes. Contractors would be responsible for the disposal of hazardous and universal wastes in accordance with federal and state laws. All hazardous, universal, and petroleum wastes generated would be disposed of in accordance with the installation's HWMP and federal, state, and local regulations. BMPs and environmental protection measures would be implemented to prevent an accidental release of these materials. Additionally, to limit the potential for an accidental release or damage, demolition activities near

Buildings 861 and 887 would avoid the area around the Initial Accumulation Point at Building 862 and the generators at Building 861.

Should unknown, potentially hazardous wastes be discovered or unearthed during construction, contractors would immediately cease work, contact appropriate installation personnel, and await sampling and analysis results before taking further action. Any unknown wastes determined to be hazardous would be managed and disposed of in accordance with applicable laws and regulations.

Long-term, negligible, adverse impacts on hazardous waste management would occur from operation and maintenance of the new facilities and infrastructure. It is anticipated that minimal additional amounts of hazardous and petroleum wastes, to include universal wastes, would be generated during operation and maintenance of the new infrastructure. All wastes generated would be handled in accordance with the installation's HWMP and federal, state, and local regulations.

Environmental Restoration Program. Short-term, minor, adverse impacts on or from IRP sites would occur. Several of the Proposed Actions would occur within or adjacent to active IRP sites. The Construct Bayshore Gate, Culvert Repair and Replacement: Bayshore Boulevard, and Widen Zemke Avenue projects would occur within SS061, and the Demolish Building 82 project would occur within the boundary of ST025. The Construct Bayshore Gate, Widen Zemke Avenue, Apron Flood Lighting, Extend DUC Ramp, Culvert Repair and Replacement: Southshore Avenue and Bayshore Boulevard, and Demolish Building 82 project areas are adjacent to active IRP sites.

Prior to the start of construction within or adjacent to an active IRP site, contractors would coordinate with the MacDill AFB ERP office to ensure that contamination of these sites or the implementation of LUCs for these sites are not impacted or spread from construction activities, and a health and safety plan would be developed in accordance with OSHA regulations to protect contractors. The ERP office would ensure that consultation and coordination is completed with FDEP, as necessary. Contractors conducting project activities within or adjacent to IRP sites with shallow groundwater contamination would take appropriate control measures should ground disturbance reach the depth of groundwater. As discussed in **Section 3.5.3.1**, any groundwater that is dewatered during construction near IRP sites would need to be containerized, sampled, and disposed of appropriately off-site to prevent leaching of contaminants. Contractors would ensure proper handling and disposal should contaminated soils be encountered during construction. Construction would not impact the ability to remediate, investigate, or monitor IRP sites, and project planning would include protection of groundwater monitoring wells. Projects would be appropriately coordinated with the MacDill AFB ERP, and all regulations would be adhered to and added to construction design and contracts.

Per- and polyfluoroalkyl substances (PFAS). Short-term, minor, adverse impacts may occur from projects within or adjacent to AFFF release areas. The Culvert Repair and Replacement: Marina Bay Drive project area is within AFFF Area 9, the northwestern corner of the Culvert Repair and Replacement: Southshore Avenue project area overlaps AFFF Area 2, and a small portion of the Apron Flood Lighting project area is within AFFF Area 5. The Extend DUC Ramp project area is adjacent to AFFF Area 1. Ground-disturbing activities would be coordinated with

the installation's ERP personnel to ensure that contamination within these sites is not impacted or spread. Contractors would ensure proper handling and disposal should contaminated soils be encountered during construction; this includes appropriate containerizing, sampling, and disposal of dewatered groundwater near AFFF release areas (see also **Section 3.5.3.1**). All regulations would be adhered to and added to construction design and contracts.

Toxic Substances. Short-term, negligible to minor, adverse impacts may occur from demolition of Buildings 82, 848, 860, 861, 863, 886, and 887. As noted in **Section 3.9.2.5**, based on the year of construction, Buildings 82, 860, 861, and 863 have the potential to contain ACMs, LBP, and PCBs; and Buildings 848, 886, and 887 have the potential to contain ACMs. Abatement activities would follow the installation's AMOP, as well as federal, state, and local regulations.

Long-term, negligible to minor, beneficial impacts would occur as a result of building demolition and subsequent reduction in the potential for human exposure to and the amounts of ACMs, LBP, and PCBs to maintain at MacDill AFB.

Radon. Short-term, negligible, adverse impacts from radon are possible but unlikely to occur. A low potential for elevated indoor radon levels exists in Hillsborough County; therefore, it is unlikely that the new facilities would have indoor radon screening levels greater 4 pCi/L. Post construction radon management measures, such as installing ventilation systems to remove radon that has already entered the building, would be installed should any building test higher than 4 pCi/L.

3.9.3.2 NO ACTION ALTERNATIVE

Under the Proposed Action, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions discussed in **Section 3.10.2** would remain unchanged. Abatement for the toxic substances in the buildings proposed for demolition would remain and continue to require maintenance by DAF personnel. Therefore, continued long-term, minor, adverse impacts on hazardous materials and wastes would be expected.

3.9.3.3 CUMULATIVE IMPACTS

The Proposed Actions, combined with reasonably foreseeable actions on the installation, would result in short- and long-term, negligible to minor, adverse, cumulative impacts on hazardous materials and waste. Short-term, minor, adverse impacts would occur under the Proposed Actions from the use of hazardous materials and petroleum products; generation of hazardous wastes during the proposed construction, demolition, and renovation; potential disturbance to toxic substances during facility demolition and renovation; and some potential overlap with active IRP sites. If construction of any of the reasonably foreseeable actions were to occur concurrently with that for the Proposed Actions, these impacts would be slightly greater, but temporary. Long-term, negligible to minor, adverse, cumulative impacts would be expected from increased use of hazardous materials and petroleum products and the increased generation of hazardous wastes under the Proposed Actions in combination with the reasonably foreseeable actions identified in **Table 3-1**, such as the power generation facility, fuel operations facility, and KC-46A MOB 6 Beddown. All activities would be conducted in accordance with the installation's

HWMP, AMOP, and federal, state, and local regulations. Therefore, significant cumulative impacts on hazardous materials and wastes management would not be expected.

3.10 Recreation and Visual

3.10.1 Definition of Resource

Recreation. Recreation includes indoor or outdoor activities involving leisure pursuits, such as archery, backpacking, cycling, camping, canoeing, gaming, fishing, hiking, hunting, kayaking, music, skiing, and theater.

Visual Resources. Visual resources include the composite scope of natural and man-made features of the landscape of an area, such as trees, topography, and man-made structures in the area.

3.10.2 Existing Conditions

The ROI for the analysis of effects on recreation and visual resources comprises the installation, the adjacent off-installation area north of the installation boundary, and the surrounding waterways.

Recreation. MacDill AFB has an allocated Recreation District for planning purposes in the southeast corner of the installation. This district consists of two family campgrounds and the Bay Palms Golf Courses (MacDill AFB 2019a). Other recreational facilities are present in the remaining planning districts, such as the skeet range in the South Airfield District, and the recreation center in the West and Central Airfield District.

A number of recreational paths are present across MacDill AFB and connect to various buildings and recreational centers. These pedestrian paths are present on the eastern and southern side of the installation, and connect to the Surf's Edge Consolidated Club, swimming pool, Short Fitness & Sports Center, Bay Palms Golf Course Clubhouse, family campgrounds, marinas, and Seascapes Restaurant & Beach (MacDill AFB 2019a).

Visual Resources. MacDill AFB is primarily dominated by the airfield and administrative or operative buildings. Natural resources such as wetlands also make up the installation. The view of Old Tampa Bay to the south and Hillsborough Bay to the east are visible on clear days at a distance of approximately 3.4 miles and 1.9 miles, respectively. Two historic districts also serve as important visual resources, retaining older architecture from the Mediterranean Revival era, while the housing district consists of modern, well-maintained houses with landscaped areas (MacDill AFB 2020a).

3.10.3 Environmental Consequences

Impacts on recreation and visual resources would be considered significant if a proposed action were to result in substantial changes to recreational resources, such as recreational areas, paths, or facilities, or disturbance to the general aesthetic of the installation.

3.10.3.1 PROPOSED ACTION

Short- and long-term, negligible to minor, adverse impacts from the Proposed Actions would occur on recreation and visual resources on MacDill AFB due to changes in recreational paths and the visual landscape.

Several projects would occur close to recreational areas, such as the Demolish Building 82 project in the Recreation District. The anticipated noise generated during demolition would cause minor disruption in the area for visitors. The JCSE Joint Operations and Logistics Maintenance Facility, Construct Bayshore Gate, and Culvert Repair and Replacement project areas would also occur less than a mile from the Bay Palms Golf Complex and Surf's Edge Consolidated Club, respectively, which would likely disrupt recreationalists with construction noise. For more discussion on noise impacts under the Proposed Actions, see **Section 3.2.3**.

Additionally, the recreational pathway along Bayshore Boulevard would be temporarily blocked during construction activities for the Construct Bayshore Gate project. Cyclists and pedestrians would be detoured around the construction area to the extent practicable or would need to take another route for the duration of construction. As part of the Construct Northern Boundary Fence project, the asphalt walking path managed by the City of Tampa would be temporarily removed, disconnecting the eastern and western portions of the pathway until the City of Tampa relocates the pathway.

Short-term, negligible, adverse impacts on recreation and the visual landscape would occur due to the presence of construction equipment. The installation is relatively flat and construction equipment would temporarily degrade the quality of the visual landscape for both recreational users and personnel.

Long-term, beneficial impacts would occur on visual resources at MacDill AFB. Demolition of older buildings to replace them with newer ones and Building 82 would improve the visual aesthetics of the installation, modernizing the overall look of MacDill AFB. See **Section 3.8.3** for discussion of impacts on the historic viewshed.

3.10.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions described in **Section 3.10.2** would remain unchanged. Deteriorating facilities and infrastructure would not be repaired or demolished and would continue to adversely impact the visual landscape of the installation. No impacts on recreation would be expected, but long-term, negligible, adverse impacts on visual resources would continue to occur.

3.10.3.3 CUMULATIVE IMPACTS

The Proposed Action, combined with reasonably foreseeable actions, would result in long-term, negligible, adverse, cumulative impacts on recreation and visual resources, and long-term, beneficial, cumulative impacts on public recreational spaces on the installation. During implementation, the visual aesthetic of the installation would be temporarily compromised in areas of heavy construction, and noise generated would cause a minor disruption around affected areas. This would potentially turn away people seeking to use recreational paths, or

temporarily reduce the enjoyment of visitors in recreational buildings near any project areas. Long-term, beneficial, cumulative impacts would however occur through overall improvement of the visual aesthetics of the installation, such as improving roadways and implementation of new facilities. Construction of the Fuel Operations Facility, Fire Station, and LRS Vehicle Maintenance Complex would introduce newer buildings to the installation and maintain a modern look. Recreational facilities and walkways would likely not be impacted heavily, apart from temporary relocation of walkways as applicable. Enhancement of natural and recreational areas through implementation of the projected INRMP projects would further promote public access and enjoyment of natural spaces on the installation.

3.11 Safety

3.11.1 Definition of Resource

Safe conditions exist in an environment where potential risk, including the potential for death, serious bodily injury, illness, or property damage, is mitigated wherever possible by adhering to existing precautionary protocols. Safety concerns involving human activity which is required to maintain operation readiness and associated activities is considered Occupational Safety. A specific aspect of ground safety addresses AT/FP considerations. Explosives and munitions safety addresses the concerns and potential impacts associated with the management, storage, and use of explosive materials necessary for installation operations and training activities. Construction safety addresses potential hazards associated with the use of machinery/equipment and common issues related to construction and demolition projects. Flight safety considers airfield and aircraft flight risks such as aircraft mishaps and accidents.

The *Occupational Safety and Health Act* (29 USC Section 651 *Congressional Statement of Findings and Declaration of Purpose and Policy*) and other relevant laws ensure safe and healthy working conditions for civilian workers by setting and enforcing standards, and providing health and safety training, outreach, education, and assistance. The health and safety of on-site military and civilian workers are also safeguarded by numerous DoD and DAF regulations designed to comply with the standards issued by OSHA and USEPA. These standards specify the amount and type of training required for industrial workers, the use of personal protective equipment (PPE) and clothing, engineering controls, and maximum exposure limits for workplace stressors.

DAFI 91-202, *The U.S. Air Force Mishap Prevention Program*, ensures that DAF operational and construction procedures meet or exceed OSHA and DAF Occupational Safety and Health (OSH) guidance (DoD Directive 4715.1E, *Environment, Safety, and Occupational Health*) as well as other federal safety and health requirements. DAFMAN 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, provides specific work procedures for a safe workplace and details safety components of construction work, including civil engineering activities, motor vehicle operations and maintenance, materials handling, mishap prevention, fire prevention, and tool and machinery operations.

3.11.2 Existing Conditions

The ROI for safety is MacDill AFB, and the land areas and airspace surrounding the airfield.

3.11.2.1 CONSTRUCTION

Contractors and DAF personnel working on MacDill AFB follow applicable OSHA regulatory requirements (29 CFR 1926), except when DoD or DAF-specific requirements apply in specific aspects where military-unique safety concerns are present. The term military-unique refers to military and civilian workplaces, operations, equipment, and systems distinctly unique to the national defense system. These unique safety concerns are typically associated with combat and operation, testing, and maintenance of military unique equipment and systems, aircrafts, weapons, early warning systems, ordnance, and tactical vehicles. Such regulatory requirements including those described in DAFMAN 91-203 (DAF 2022) address DAF safety measures related to the exposure to hazardous materials, use of PPE, and availability of Safety Data Sheets.

Contractors and DAF personnel review potentially hazardous workplace operations; monitor exposure to chemicals (e.g., asbestos, lead, hazardous materials, and range residue), physical hazards (e.g., noise propagation and falls), and biological agents (e.g., infectious waste, wildlife, and poisonous plants); recommend and evaluate controls (e.g., prevention, administrative, and engineering) to ensure personnel are properly protected or unexposed; and ensure a medical surveillance program exists to perform occupational health physicals for workers subject to accidental chemical exposures.

3.11.2.2 OCCUPATIONAL SAFETY

Day-to-day operation and maintenance activities conducted at MacDill AFB are performed in accordance with applicable DAF safety regulations, published DAF Technical Orders, and standards prescribed by DAF OSH requirements. These are intended to reduce occupational risks to government personnel and contractors, and to protect other individuals that reside on, visit, or are near the installation.

3.11.2.3 AT/FP

AT/FP is a security program designed to protect DAF active-duty personnel, civilian employees, family members, and facilities and equipment in all locations and situations. These guidelines address a range of considerations that include access to the installation, access to facilities on the installation, facility siting, exterior design, interior infrastructure design, and landscaping. UFC 04-010-01, *DoD Minimum Antiterrorism Standards for Buildings*, provides minimum levels of protection against terrorist attacks from occupants of all DoD inhabited buildings. The AT/FP program is intended for use by security, anti-terrorism personnel, and design teams that identify minimum requirements that must be incorporated into design of all new construction and major renovation projects to occur at DoD inhabited facilities. Some design guidelines include access to the installation, base siting, interior and exterior infrastructure design, and landscaping. The intent of AT/FP and design guidance is to improve security, minimize fatalities, and limit damage to facilities and personnel in the event of a terrorist attack at MacDill AFB (UFC 04-010-01, USACE 2018).

Many military installations, including MacDill AFB, were developed before such considerations became a critical concern. Thus, under current conditions, many units are not able to comply with all current AT/FP standards. New construction and modification of facilities would incorporate applicable AT/FP standards to the maximum extent practicable.

3.11.2.4 EXPLOSIVES AND MUNITIONS

The explosives and munitions safety program at MacDill AFB is conducted in accordance with Defense Explosives Safety Regulation (DESR) 6055.09_AFMAN 91- 201, *Explosive Safety Standards*. The purpose of the program is to provide the maximum possible protection to personnel and property, both inside and outside the installation, from the damaging effects of potential accidents involving ammunition and explosives. Ordnance is handled and stored in accordance with DAF explosive safety directives and all munitions maintenance is carried out by trained, qualified personnel using DAF-approved technical procedures (MacDill AFB 2019a).

DESR 6055.09_AFMAN 91-201 establishes the size of the clearance zone around facilities used to store, handle, and maintain munitions based on the quantity-distance criteria. ESQD arcs have been established at MacDill AFB to ensure that the minimum safety distance is incorporated where explosions have the potential to occur. Activities within the ESQD include munitions storage, inspection, maintenance, shipping and receiving, as well as other explosive operations. Currently, ESQD arc coverage is approximately 724 acres at MacDill AFB (see **Figure 3-1**) (MacDill AFB 2019a). The Extend DUC Ramp and majority of the Apron Flood Lighting project areas would be within an ESQD arc.

3.11.3 Environmental Consequences

Impacts on safety are assessed according to the magnitude of changes potentially impacting the wellbeing of personnel, the public, and DAF property. The proposed development projects described in the Proposed Actions were considered to determine where additional or unique safety risks are associated with their implementation. Any increase in safety risks is considered an adverse impact on safety. A proposed action would have significant impacts on safety if any of the following were to occur:

- Substantial increase in risks associated with the safety of DAF personnel or the general public
- Introduction of a new safety risk for which DAF is not prepared or does not have adequate management and response plans in place
- Hinderance to the ability for a quick response to an emergency.

3.11.3.1 PROPOSED ACTION

Construction. Short-term, minor, adverse impacts on contractor safety during facility construction, demolition, and renovation may include potential slips, falls, unfamiliar working environments, noise exposure, and specific hazards such as handling power tools and working with heavy equipment, trucks, and machinery. C&D efforts are also expected to have inherent danger from noise associated with machinery and equipment. See **Section 3.2.3** for additional information on noise impacts as expected under the Proposed Actions. All proposed construction activities would be conducted in accordance with applicable DAF safety protocols, standards prescribed by the DAF OSH program, and OSHA regulations. MacDill AFB has and will continue to comply with all applicable DAF, DAF OSH, and OSHA regulatory requirements and safety measures required for use of munitions/explosives to provide a safe working environment while supporting mission efforts. Individual installation development projects as described in **Table 2-1**, would increase potential safety concerns associated with construction

and demolition actions. Additionally, C&D personnel would be provided with proper training on potential hazards and given all necessary PPE to mitigate potential safety risks. PPE may include hard hats, steel-toed boots, hearing protection, signage, safety harnesses, communication devices, and any other equipment deemed necessary for the proposed projects.

Additionally, short-term, minor, adverse impacts could be expected from an increase in potential risk during construction from temporary roadway closures/detours and the potential for associated accidents or roadway mishaps. Additional information regarding impacts on transportation and traffic can be found in **Section 3.6**.

Occupational Safety. Once operational, no aspects of the Proposed Actions are expected to generate new or unique occupational safety concerns; therefore, no changes in health safety conditions are anticipated over the long-term. Projects and facilities would be operated in accordance with applicable regulations, technical orders, and DAF OSH standards to avoid or minimize, to the extent possible, potential impacts on health and safety.

AT/FP. Short-term, minor, adverse impacts are expected to occur under the Proposed Actions from temporary disruptions associated with construction of the Bayshore Gate project. In the short-term, the existing Bayshore Gate guard station would be closed. During construction of the proposed Bayshore Gate project, it is expected that adverse impacts on the AT/FP program would be experienced from the lack of a functional gate and associated security measures during the time of construction. Additional stress on AT/FP would be expected at other entrances throughout the installation from closure of the Bayshore Gate area in the short-term.

Long-term, minor, beneficial impacts are expected to occur under the Proposed Actions. Long-term, beneficial impacts are expected in the operational phase from new construction, renovations, and repairs that would improve the functionality of the AT/FP program at MacDill AFB. AT/FP improvements resulting from construction and operation of the Construct Bayshore Gate, JCSE Joint Operations and Logistics Maintenance Facility, Widen Zemke Avenue, Apron Flood Lighting, and Construct Northern Boundary Fence projects would be beneficial to AT/FP.

Operation of the upgraded Bayshore Gate and widening of Zemke Avenue would improve traffic flow, reduce traffic congestion, and support enhanced AT/FP reaction times at the MacDill AFB entrance along Bayshore Boulevard. Construction of the proposed JCSE Joint Operations and Logistics Maintenance and RUBB facilities would support the AT/FP program at MacDill AFB by providing a secure consolidated facility, which would replace existing buildings that are operating inefficiently. The proposed Apron Food Lighting project would add lighting to the edge of the airfield apron and delineate areas where existing safety infrastructure is not present but required. Construction of the Northern Boundary Fence would provide a more secure barrier between MacDill AFB and unauthorized personnel.

Explosives and Munitions. Short-term, negligible, adverse impacts on safety involving explosives and munitions would be expected during development activities required for the Proposed Actions. Adverse impacts are expected to occur from an increased risk to installation personnel and those involved with construction efforts within an ESQD arc. Although the Apron Flood Lighting and Extend DUC Ramp projects would be located within an EQSD arc, impacts on safety during construction would be very unlikely as MacDill AFB does not house a lot of

munitions, and the munitions currently on the installation are not highly explosive. In an operational phase, the Extend DUC Ramp and Apron Flood Lighting projects would not require personnel; therefore, no long-term impacts on safety at MacDill AFB would be expected. Construction of the proposed infrastructure development projects would not impact the existing explosives and munitions program at the installation, which would continue to be conducted in accordance with DESR 6055.09_AFMAN 91-201. Existing coordination procedures would continue to be implemented to ensure the safety of all MacDill AFB personnel while working in the proposed project areas.

3.11.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions described in **Section 3.11.2** would remain unchanged. Some of the existing facilities and infrastructure would continue to degrade to failure and violate AT/FP and safety requirements, and traffic congestion on the installation would continue to impede operational efficiency on the installation. Therefore, continued long-term, moderate, adverse impacts on safety would be expected.

3.11.3.3 CUMULATIVE IMPACTS

Reasonably foreseeable actions identified in **Table 3-1** that would occur in a similar timeframe and location as those described under the Proposed Actions would have the potential for short-term, minor, adverse, cumulative impacts on safety due to increased construction-related noise, roadway congestion and closures, and the potential for spills, falls, and other hazards related to construction work. The potential for these impacts would be minimized wherever possible by adhering to established safety programs at MacDill AFB.

Long-term, beneficial, cumulative impacts resulting from operation of the proposed facilities and infrastructure along with the reasonably foreseeable actions would include increased base-wide efficiency through improved facilities, updated infrastructure, and continued maintenance at MacDill AFB in support of safety measures. General safety conditions, AT/FP, and occupational safety would be expected to improve in the operational phase from the proposed projects to maintain base-wide security and safety standards.

3.12 Environmental Justice

3.12.1 Definition of Resource

Environmental justice is defined as the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other federal activities that affect human health and the environment so that people:

- are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and

- have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices (EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*; 21 April 2023).

Table 3-20 lists the applicable policies that direct and guide consideration and impact analysis regarding environmental justice. Environmental justice considers minority and low-income populations within the area where potential impacts from a proposed action could occur. Such information aids in evaluating whether a proposed action would render vulnerable any of the populations targeted for protection. Potential environmental justice impacts are identified by locating low-income and minority populations in and near the project area as well as calculating their percentage in that area relative to a reference population. The reference population is the smallest jurisdiction for which United States Census Bureau (USCB) data are collected that encompasses the footprint of impacts for all resource areas.

Table 3-20. Federal Policies Directing and Guiding Environmental Justice

Policy Title	Description
EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (issued on 11 February 1994)	Created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, and local programs and policies. EO 12898 requires each federal agency to identify and address whether their proposed action results in disproportionately high and adverse environmental and health impacts on low income or minority populations.
EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (23 April 1997)	States that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately impact children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." Activities occurring near areas that could have higher concentrations of children during any given time, such as schools and childcare facilities, might further intensify potential impacts on children. To the extent to which children might be impacted, a disproportionate impact on children is inherent due to their inherent vulnerabilities.
DAF's *Guide for Environmental Justice Analysis under the Environmental Impact Analysis Process* (32 CFR 989.33; 20 June 2014)	Although not specifically identified as environmental justice populations, the DAF guidance identifies child and elderly populations as sensitive receptors and discusses the importance of analyzing impacts on these populations because they have the potential to be more susceptible than other populations to certain environmental impacts and risks (DAF 2014).
EO 13985, *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (20 January 2021)	Directs agencies to evaluate whether their policies generate racially inequitable results when implemented and to make necessary changes to ensure underserved communities are properly supported. In acknowledgement that this work would require multi-generational commitment and whole-of-government.

Policy Title	Description
EO 14008, *Tackling the Climate Crisis at Home and Abroad* (27 January 2021)	Amends EO 12898 to create, within the Executive Office of the President, a White House Environmental Justice Interagency Council (Interagency Council) and called for the Interagency Council to provide recommendations for further updating EO 12898.
EO 14031, *Advancing Equity, Justice, and Opportunity for Asian Americans, Native Hawaiians, and Pacific Islanders* (28 May 2021),	Builds upon prior EOs and seeks to eliminate barriers to equity and justice for Asian American, Native Hawaiian, and Pacific Islander populations.
Department of Defense Equity Action Plan (DoD 2022)	Pursuant to EO 13985, this plan includes a strategy to advance equity and rectify past harms resulting from environmental and other impacts from defense activities on ancestral lands.
EO 14091, *Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (16 February 2023)	Builds on EO 13985 by mandating a whole-of-government, multi-generational commitment to extending and strengthening equity-advancing requirements to support underserved community workforces, economy, housing, equity in health (including mental and behavioral health), civil rights, and equal justice under law.
EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All* (21 April 2023)	Directs all federal agencies to prioritize outreach to communities with environmental justice concerns, which can include all demographics, and possible legacy pollution and systemic treatment. This involves providing and encouraging engagement opportunities for the public to share concerns and participate in decision-making such as revising agency procedures, which is especially encouraged for people affected by federal actions. Additionally, this EO formally defined environmental justice, and revised the EO 12898 reporting threshold such that federal agencies must now identify and disclose disproportionate and adverse impacts low income or minority populations.

Key: EO – Executive Order; DAF – Department of the Air Force; DoD – Department of Defense

As defined by CEQ, minority or low-income environmental justice communities should be identified if the percentage of persons characterized as being a minority or low-income populations within the ROI is either greater than 50 percent of the total population, or the minority or low-income population percentage is meaningfully greater than the population percentage of the community of comparison. In this IDEA, the analysis uses a conservative interpretation of "meaningfully greater than" to include any minority or low-income population that is greater than that of the community of comparison to any extent. CEQ also states, "A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds" (CEQ 1997). The community of comparison is the smallest jurisdiction for which USCB data encompass the footprint of impacts for each resource and is used to establish appropriate thresholds for impacts analysis (DAF 2014). Environmental justice communities present within the ROI were determined using these thresholds. Further, for purposes of this IDEA, minority, low-income, child, and elderly populations are defined as follows:

- *Minority Population:* Minority populations are defined as members of the following population groups: Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, multi-race that includes one of the

aforementioned races; and Hispanic or Latino (CEQ 1997, DAF 2014). USCB considers race and Hispanic or Latino origin (ethnicity) as two separate concepts, and these data are recorded separately.

- *Low-income Population:* Low-income populations are defined as individuals whose income is below the federal poverty threshold based on income data collected in the 2018–2022 American Community Survey (USCB 2022). In 2020, the federal poverty threshold for an individual was $13,171 (USCB 2020).
- *Child Population:* Children are defined as all people 17 years of age and under.
- *Elderly Population:* Elderly persons are defined as all people 65 years of age and over.

3.12.2 Existing Conditions

Population and demographics data used to determine the presence of communities with environmental justice considerations within the environmental justice ROI were collected from multiple databases and tools. The following lists the data sources typically required to determine existing conditions for minority, low-income, and other vulnerable populations.

USCB Database. Demographics (race, age, and income) data for Hillsborough County, Florida, and communities neighboring MacDill AFB were retrieved online from the USCB database (www.data.census.gov).

Climate and Economic Justice Screening Tool (CEJST). Per EO 14008, the CEJST was developed to provide a consistent government-wide identification of communities with environmental justice concerns. The CEJST has an interactive map and uses many datasets (including best available 2020 USCB data) as indicators of burdens in eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.

Environmental Justice Screening Tool (EJScreen). USEPA developed EJScreen to support federal agency compliance with EO 12898 and to provide environmental and demographic information down to the community level for any part of the country. This tool uses the most recent data from the American Community Survey, as well as data on climate change and other health vulnerabilities.

The ROI for this environmental justice analysis consists of Census Tracts 69, 70.02, and 72 located along the northern and western boundaries of the installation, and Census Tract 73, which encompasses MacDill AFB (see **Figure 3-6**). **Table 3-21** lists the minority, low-income, child, and elderly populations for each of the tracts. The community of comparison is Hillsborough County, and data for Florida is provided as an additional area of comparison.

Based on the American Community Survey estimates for 2022, the total minority population percentages ranged between 26 to 67 percent in the census tracts surrounding MacDill AFB. The Census Tract 70.02 minority population is greater than 50 percent of the total tract population, and is also meaningfully greater than the minority population percentage of the community of comparison. Therefore, Census Tract 70.02 is considered a community with environmental justice concerns.

Figure 3-6. Environmental Justice ROI

Table 3-21. Minority, Low-Income, Child, and Elderly Populations in the MacDill AFB Vicinity

Geographic Area	Total Population	Percent Minority	Percent Low-Income	Percent Elderly	Percent Children
Census Tract					
69	6,008	26.3	5.8	9.2	26.6[2]
70.02	3,060	66.7[1]	24.9[1]	7.5	28.4
72	4,843	32.0	7.3	6.7	26.0
73	2,309	48.6	1.7	0.0	36.9
Community of Comparison					
Hillsborough County	1,468,560	53.7	13.7	20.9	21.8
Florida	21,634,529	48.0	12.9	14.6	19.6

Source: USCB 2022

[1] Indicates the percentage of the population is meaningfully greater than the percentage of the reference population of the community of comparison and is therefore considered a community with environmental justice concerns.

Additionally, upon review of the CEJST data for census tracts in the environmental justice ROI, Census Tract 70.02 was determined to be a community that is disadvantaged in the categories of workforce development, climate change, and housing because the estimated tract population in 2020 met more than one of the tool's burden thresholds as well as the associated socioeconomic (low-income) threshold (CEQ 2022). Specifically, Census Tract 70.02 had a 99 percent (greater than 90 percent threshold) projected flood risk; 86 percent (greater than 65 percent threshold) of the population in households where income is less than or equal to twice the federal poverty level; 93 percent (greater than 90 percent threshold) share of households that make less than 80 percent of the area median family income and spend more than 30 percent of income on housing; 90 percent (greater than 90 percent threshold) unemployment in the available workforce; 11 percent (greater than 10 percent threshold) of the population age 25 and older had less than a high school education; and 90 percent (greater than 90 percent threshold) of people in the tract are in households that were earning at or below the federal poverty level and were therefore considered low-income.

Child populations in the census tracts surrounding MacDill AFB were approximately 26 to 37 percent of the total populations of those tracts. Elderly populations in the census tracts range from 0.0 to 9.2 percent.

3.12.3 Environmental Consequences

Impacts would be considered significant if they disproportionately affect populations with environmental justice concerns or sensitive receptors compared to the general population. Significant impacts on populations with environmental justice concerns and sensitive receptors could include a substantial increase in noise levels or air emissions during construction, renovation, and demolition. Disproportionate impacts on vulnerable and overburdened communities are considered significant under NEPA if they would:

- disrupt public services (such as emergency and protective services, schools, hospitals, and childcare centers) that are geared to support these overburdened and vulnerable communities

- reduce environmental quality to affect reduced health or safety
- result in a deficit of resources (utilities, drinking water, waste management infrastructure, biological resources used for subsistence) upon which these communities rely
- cause changes in income, availability of housing, or availability of jobs that would further reduce existing socioeconomic conditions.

3.12.3.1 PROPOSED ACTION

Short-term, minor to moderate, disproportionate and adverse impacts on communities with environmental justice concerns would occur from increased construction-related traffic, noise, and air emissions associated with the Proposed Actions.

Tract 70.02 is considered a community with environmental justice concerns. Increased construction-related traffic, noise, and air emissions associated with the Proposed Actions, would contribute short-term, minor to moderate, disproportionate and adverse impacts on this off-installation community but would be temporary.

Construction BMPs (e.g., fencing and other security measures) would reduce safety risks for on-installation populations to minimal levels. Increases in air emissions, noise, and traffic associated with construction and renovation may impact surrounding areas and populations but would be temporary and intermittent and cease upon completion of the construction phase. All census tracts within the ROI have child populations meaningfully greater than Hillsborough County, therefore, short-term, minor to moderate, disproportionate and adverse impacts on children could occur as a result of the Proposed Actions but would be temporary.

Children and elderly individuals at the on-installation sensitive receptors identified in **Section 3.2.3** in **Table 3-4**, would experience increased noise levels and exhaust emissions from operation of construction vehicles and equipment and nearby construction activities. These activities would be intermittent and temporary. Appropriate minimization measures (such as use of equipment mufflers and noise barriers) would be implemented, as practicable, to minimize these noise effects. Although construction-related noise would be audible, noise impacts would not be appreciable for children and elderly individuals that would primarily be located indoors when development activities are occurring.

As discussed in **Section 3.2.3.1**, the highest estimated noise (73 dBA) for Tinker K-8 School would occur at the school's southwestern corner. At this location, it is assumed that children would be indoors and buffered by the school's exterior walls, internal insulation, and interior walls where indoor noise would be between 10 and 30 dB less than outdoor noise levels. Additionally, adjacent to the southwestern corner of the school property is a 100-foot forested vegetation buffer, and the entire JCSE compound is walled off. The presence of the wall and vegetation buffer creates an existing noise barrier that would reflect, refract, and/or absorb noise as it travels in the direction of Tinker K-8 School. The estimated noise (73 dBA) does not account for the school building insulation or these buffers, which would contribute to noise reduction. Therefore, classroom disruption would not be expected, if it were to occur at all. Anticipated construction-related noise increases affecting outdoor noise levels on the school playground would be at or below levels acceptable for noise sensitive land uses.

Additionally, construction activities would be limited to daytime hours (7:00 am to 5:00 pm; verify with the installation or local city noise ordinance for these times); therefore, no nighttime noise and sleep disturbance would occur for nearby residential areas.

No long-term impacts on communities with environmental justice concerns or sensitive receptors would be expected. Mitigation measures have not been identified for environmental justice communities near MacDill AFB and would not be required to reduce impacts to less than significant. The DAF would implement avoidance and minimization BMPs, to reduce adverse impacts.

3.12.3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed facility construction, infrastructure construction and repair, and demolition projects would not occur, and the existing conditions discussed in **Section 3.12.2** would remain unchanged. Therefore, no impacts on Environmental Justice would be expected.

3.12.3.3 CUMULATIVE IMPACTS

Temporary increases in air emissions, noise, and traffic associated with construction, renovation, and demolition may affect surrounding areas and populations. If the Fuels Operations Facility, LRS Vehicle Maintenance Complex, and the facility and infrastructure projects related to the KC-46A MOB 6 Beddown, were to occur concurrently with the Proposed Action, short-term, moderate, adverse, cumulative impacts on environmental justice or sensitive receptor populations could occur. These impacts would be distributed evenly across the surrounding area and would not disproportionately affect disadvantaged or sensitive receptor populations because there would not be an increased exposure to environmental health or safety risks. Improved accesses and enhancement of natural resources and recreational areas as result of the foreseeable INRMP projects would beneficially impact all populations on the installation.

3.13 Irreversible and Irretrievable Commitment of Resources

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be reversed or recovered, even after an activity has ended and facilities have been decommissioned. A commitment of resources is related to use or destruction of nonrenewable resources, and the impacts that loss will have on future generations. For example, if prime farmland is developed, a permanent loss of agricultural productivity would occur. Implementation of the proposed installation development projects would involve the irreversible and irretrievable commitment of biological resources, materials, energy, labor, and landfill space. The impacts on these resources would be permanent.

Biological Resources. Implementation of the Proposed Actions would create a permanent loss of up to 24,400 square feet of habitat that would become impervious surface and would not be vegetated, as well as a loss or reduction in quality of up to 3.2 acres of wetlands, representing irreversible or irretrievable resources.

Materials. Material resources, including hazardous materials used for the Proposed Actions, would potentially include asphalt, steel, and various construction materials and supplies. The

materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant. Additionally, their purchase would benefit local construction material vendors.

Energy. Energy resources, including petroleum-based products (e.g., gasoline, diesel), used for the Proposed Actions would be irretrievably lost. During construction, gasoline and diesel would be used for the operation of vehicles and construction equipment. Consumption of these energy resources would not place a significant demand on their availability within the region.

Labor. Individuals hired by construction companies to support the Proposed Actions would be part of a temporary and irretrievable loss of labor resources because the construction workers would temporarily be unable to support other projects or activities within the area. This would be considered beneficial overall for the Okaloosa County economy.

Landfill Space. Generation of solid waste from construction, renovation, and demolition under the Proposed Actions would reduce overall landfill space in the local area.

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5. List of Preparers

This IDEA has been prepared by HDR, Inc., under the direction of DAF and MacDill AFB. The individual contractors that contributed to the preparation of this document are listed as follows:

Isha Alexander
HDR, Biological Resources
M.S. Biology
M.A. Organizational Psychology
B.A. Psychology
Years of Experience: 20

Michelle Bare
HDR, Infrastructure, Hazardous Materials and Waste
General Studies
Years of Experience: 34

Chad Blackwell
HDR, Cultural Resources
M.H.P. Historic Preservation
B.A. History
Years of Experience: 20

Timothy Didlake
HDR, Air Quality
B.S. Earth Sciences
Years of Experience: 16

Jessica Forbes
HDR, Cultural Resources
M.A. History/Public History
B.A. History
Years of Experience: 10

Kathy Lemberg
HDR, GIS
B.A. Anthropology
Years of Experience: 17

Carolyn Hein
HDR, Air Quality
B.S. Environmental Science
Years of Experience: 5

Abbey Humphreys
HDR, Deputy Project Manager
M.S. Biology
B.S. Environmental Biology
B.S. Geospatial Science
Years of Experience: 7

Emily Moeller
HDR, Quality Assurance/Quality Control
M.S. Natural Resources Law Studies
B.A. Biology
Years of Experience: 18

Celeste Ott
HDR, Land Use, Infrastructure, Safety
B.S. Environmental Science: Geography
Years of Experience: 2

Deborah Peer
HDR, Project Manager
M.S. Environmental Management
B.S. Zoology
B.S. Wildlife Science
Years of Experience: 23

Amberlyn Rector
HDR, Noise, Geological Resources, Environmental Justice
B.G.S. General Studies
Years of Experience: 3

Patrick Solomon, CEP
HDR, Quality Assurance/Quality Control
M.S. Geography
B.A. Geography
Years of Experience: 30

Dylan Wake
HDR, Hazardous Materials and Waste
B.S. Environmental Science & Policy
Years of Experience: 1

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A

Agency and Tribal Correspondence

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Appendix A: Agency Correspondence

Agency Coordination Distribution List

Dr. Timothy A. Parsons
Director, State Historic Preservation Officer
Division of Historical Resources
Florida Department of State
500 South Bronough Street
Tallahassee, FL 32399

Mr. Christopher Stahl
Coordinator
Florida Department of Environmental Protection
Florida State Clearinghouse
3800 Commonwealth Boulevard
Mail Station 47
Tallahassee, FL 32399

Mr. Robert Aldredge
U.S. Fish and Wildlife Service
7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256

Mr. David Bernhart
Assistant Regional Administrator for Protected Resources
National Marine Fisheries Service
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

[[NOTE: Copies of all agency correspondences regarding NHPA Section 106 consultation, ESA Section 7 consultation, CZMA coastal consistency, and coordination with State agencies will be incorporated in this Appendix in the Final EA.]]

Coastal Zone Management Act Coastal Consistency Determination

MacDill AFB Coastal Zone Consistency Determination

Introduction

This document provides the State of Florida with the United States Department of the Air Force's (DAF) Federal Consistency Determination under the Coastal Zone Management Act (CZMA) Section 307 and 15 Code of Federal Regulations (CFR) 930 Subpart C. The information in this Consistency Determination is provided pursuant to 15 CFR 930.39; Section 307 of the CZMA; and 16 United States Code Section 1456, as amended, and its implementing regulations at 15 CFR 930.

Proposed Federal Agency Action

This Federal Consistency Determination addresses the DAF's proposed nine facility construction, infrastructure construction and repair, and demolition projects that were identified as priorities for installation development at MacDill Air Force Base (AFB) between fiscal years (FYs) 2025 and 2030.

The intent of the ongoing process of installation development at MacDill AFB is to provide infrastructure improvements necessary to support the mission of the 6th Air Refueling Wing (ARW) and mission partners. The Installation Development Environmental Assessment (IDEA) developed to analyze impacts from installation development addresses nine proposed facility construction, infrastructure construction and repair, and demolition projects that were identified as priorities. Resources addressed in the IDEA include noise, land use, air quality, biological resources, water resources, infrastructure and transportation, geological resources, cultural resources, hazardous materials and wastes, recreation and visual, safety, and environmental justice.

The purpose of the Proposed Actions are to provide infrastructure and functionality improvements necessary to support the missions of the 6 ARW and MacDill AFB mission partners. The Proposed Actions are needed because address deficiencies in function and capability of the facilities and infrastructure at MacDill AFB that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Left unchecked, these deficiencies degrade the ability of the installation to meet the DAF and Department of Defense (DoD) current and future mission requirements relative to the applicable regulatory requirements.

Federal Consistency Review

The Florida Statutes addressed as part of the Florida Coastal Management Program consistency review and considered in the analysis of the Proposed Actions at MacDill AFB are discussed in **Table A-1**.

Table A-1. Florida Coastal Management Program Federal Consistency Review

Statute	Scope	Consistency
Chapter 161, F.S. *Beach and Shore Preservation*	Authorizes the Florida Department of Environmental Protection to regulate construction on or seaward of the state's beaches	The Proposed Actions would have minor, adverse impacts on shorelines along MacDill AFB from the trimming and limited removal of mangrove limbs. MacDill AFB would adhere to mangrove trimming stipulations outlined in Sections 403.9321-403.9333 of the Mangrove Trimming and Preservation Act.
Chapter 163, F.S. *Intergovernmental Programs: 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 that is consistent with the public interest	The Proposed Actions would not impact local government comprehensive plans.
Chapter 186, F.S. *State and Regional Planning*	Details state-level planning requirements; requires the development of special statewide plans governing water use, land development, and transportation	State and regional agencies will be provided the opportunity to review the IDEA. The Proposed Actions would not affect nor interfere with the development of state plans for water use, land development, or transportation.
Chapter 252, F.S. *Emergency Management*	Directs the state to reduce the vulnerability of its people and property to natural and human-made disasters; prepare for, respond to, and reduce the impacts of disasters; and decrease the time and resources needed when responding to disasters	The Proposed Actions would not have adverse impacts on the ability of the state to manage and respond to natural and human-made disasters.
Chapter 253, F.S. *State Lands*	Provides the framework for conservation and protection of natural and cultural resources on state-owned lands	The Proposed Actions would occur on federal property; therefore, no impact on state-owned lands would occur.
Chapter 258, F.S. *State Parks and Preserves*	Addresses administration and management of state parks, preserves, and recreation areas	The Proposed Actions would not impact state parks, recreational areas, nor preserves.
Chapter 259, F.S. *Land Acquisitions for Conservation or Recreation*	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands	The Proposed Actions would not affect publicly owned lands for tourism or outdoor recreation.
Chapter 260, F.S. *Florida Greenways and Trails Act*	Authorizes acquisition of land to create a recreational trails system (Florida Greenways and Trails System) and to facilitate management of the system	The Proposed Actions would not include acquisition of land and would not affect the Greenways and Trails Program.

Statute	Scope	Consistency
Chapter 267, F.S. *Historical Resources*	Addresses management and preservation of the state's archaeological and historic resources	The Proposed Actions would not have an adverse effect on historic properties. The Apron Flood Lighting project area is the only one of the nine project areas that includes a documented historic property. The easternmost component of the Apron Flood Lighting project area slightly overlaps the southwestern boundary of the MacDill Field Historic District adjacent to Hangars 3, 4 and 5, which are all individually eligible for listing in the National Register of Historic Places (NRHP) and considered contributing elements to the historic district. The introduction of new lighting would introduce a minor infrastructure element to the setting of the NRHP-eligible historic district and three individual hangars but would not impact the integrity of the historic properties, and, therefore, would not result in an adverse effect to historic properties under Section 106 of the National Historic Preservation Act (NHPA). The DAF is satisfying its responsibilities under Section 106 of the NHPA concurrent with the NEPA Process as provided for in 36 CFR 800.8 (a), by consulting with the Florida SHPO and four federally recognized tribes with a historic or cultural affiliation with MacDill AFB lands. The Proposed Actions would not affect archaeological or traditional resources because no such properties have been identified in the area of potential effects (APE).
Chapter 288, F.S. *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 Actions would not have adverse impacts on Florida industries or economic diversification efforts.
Chapter 334, F.S. *Transportation Administration*	Addresses the transportation administration policies of the state	Short-term, minor impacts are anticipated on the transportation network at MacDill AFB from construction vehicles, and closures during construction. Traffic and congestion may increase in a short-term phase. Long-term, minor to moderate, beneficial impacts on the transportation network and traffic at MacDill from widening Zemke Avenue and construction of the Bayshore Gate.

Statute	Scope	Consistency
Chapter 339, F.S. *Transportation Finance and Planning*	Addresses the state's transportation systems finance and planning needs	The Proposed Actions would not affect the finance and planning needs of the state's transportation system.
Chapter 373, F.S. *Water Resources*	Addresses conservation and preservation of water resources, water quality, and environmental quality.	Short- and long-term, negligible to minor, adverse impacts on the surficial aquifer at MacDill AFB could occur due to potential intersection between construction, demolition, and renovation and the surficial aquifer as well as impacts on groundwater recharge from an increase in impervious surfaces. Similar levels of impacts on surface water, floodplains, and wetlands would occur due to increased stormwater runoff, flooding potential, and erosion and sedimentation during ground disturbance from construction activities and an increase in impervious surfaces under the Proposed Actions. Impacts would be minimized through implementation of environmental protection and BMPs and by following the project-specific and installation SWPPPs. All applicable permits would be coordinated in accordance with Florida statutes and the NPDES. Therefore, the Proposed Actions would be consistent with Florida statutes and regulations regarding water resources.
Chapter 375, F.S. *Outdoor Recreation and Conservation Lands*	Addresses the development of a comprehensive multipurpose outdoor recreation plan	The Proposed Actions would not affect opportunities for outdoor recreation on state lands.
Chapter 376, F.S. *Pollutant Discharge Prevention and Removal*	Regulates the transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges	All petroleum, oils, and lubricants would be managed through implementation of the installation's Spill Prevention, Control, and Countermeasures Plan. Handling, storage, transportation, and disposal activities would be conducted in accordance with applicable federal, state, and local regulations; DAF Instructions; and the MacDill AFB Hazardous Waste Management Plan.

Statute	Scope	Consistency
Chapter 377, F.S. *Energy Resources*	Addresses the regulation, planning, and development of oil and gas resources of the state	The Proposed Actions would not affect energy resource production, including oil and gas, in Florida.
Chapter 379, F.S. *Fish and Wildlife Conservation*	Addresses the management of the wildlife resources of the state	The Proposed Actions would result in temporary disturbance of vegetation and soil compaction during construction, demolition, and renovation and from permanent vegetation removal for new facilities and associated infrastructure. Short-term impacts from temporary disruption of approximately 756,600 square feet of vegetation would occur due to the use of heavy equipment and may include trampling and soil compaction. The Proposed Actions would result in short-term, minor to moderate, and long-term, minor adverse impacts on wildlife and special status species from increased noise and potential displacement associated with construction, demolition, and renovation activities. Some birds, small mammals, invertebrates, and other common small wildlife species may use these project areas for shelter and feeding. Moderate impacts would be temporary in nature and cease with completion of construction activities, and affected wildlife may return to the area.
Chapter 380, F.S. *Land and Water Management*	Establishes state land and water management policies to guide and coordinate local decisions relating to growth and development	The Proposed Actions would be consistent with state and local policies regarding growth and development. The Proposed Actions would not include changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, nor use of state funds for infrastructure planning, designing, or construction.

Statute	Scope	Consistency
Chapter 381, F.S. *Public Health: General Provisions*	Establishes public policy concerning the state's public health system	The Proposed Actions would not affect the state's policy concerning the public health system.
Chapter 388, F.S. *Mosquito Control*	Addresses mosquito control efforts in the state	The Proposed Actions would not affect mosquito control efforts.
Chapter 403, F.S. *Environmental Control*	Establishes public policy concerning environmental control (i.e., pollution control) in the state	The Proposed Actions would have negligible to minor impacts on groundwater and surface water quality and quantity, protection of potable water supply, floodplains and wetlands, and the conservation of environmentally sensitive living resources. The Proposed Actions would have minor to moderate impacts on air quality. Minimization measures for these impacts are identified in the IDEA.
Chapter 553, F.S. *Building Construction Standards*	Addresses building construction standards for a unified Florida Building Code	The Proposed Actions would comply with the state's construction standards; therefore, no impacts on building construction standards would occur. New facilities would be constructed in conformance with EO 14008, DoD's UFC-2-100-01, the DoD's *2021 Climate Adaptation Plan,* FEMA Federal Flood Risk Management Standards, including elevating facilities above the floodplain, and Southwest Florida Water Management District (SWFWMD) permit requirements to avoid or minimize flood impacts.
Chapter 582, F.S. *Soil and Water Conservation*	Provides for the control and prevention of soil erosion	Soil disturbance would occur during construction and renovation projects associated with the Proposed Actions but would be controlled through implementation of environmental protection measures and BMPs. Additionally, adherence to site-specific Erosion and Sediment Control Plans, both site-specific and installation SWPPPs, and Section 438 of the Energy Independence and Security Act would further minimize impacts.
Chapter 597, F.S. *Aquaculture*	Establishes public policy to enhance the growth of aquaculture	The Proposed Actions would not affect aquaculture.

Key: F.S. – Florida Statute; NHPA – National Historic Preservation Act; NRHP – National Register of Historic Places; SHPO – State Historic Preservation Officer; NEPA – National Environmental Policy Act; NRHP – National Register of Historic Places; NHPA – National Historic Preservation Act; APE – area of potential effects; BMP – best management practices; SWPPP – Stormwater Pollution Prevention Plan; NPDES – National Pollutant Discharge Elimination System; IDEA – Installation Development Environmental Assessment; CFR – Code of Federal Regulations; SWFWMD – Southwest Florida Water Management District

Based on the information and analysis provided in **Table A-1**, MacDill AFB finds that the Proposed Actions, comprising the nine installation development projects, is consistent with the applicable enforceable policies and mechanisms of the Florida Coastal Management Program.

Pursuant to 15 CFR 930.41, the Florida State Clearinghouse has 60 days from receipt of this document to concur with, or object to, this Consistency Determination, or to request an extension in writing under 15 CFR 930.41(b). Florida's concurrence will be presumed if MacDill AFB does not receive its response by the 60th day from receipt of this determination.

[[Correspondences between MacDill AFB to Florida State Clearinghouse Requesting a Coastal Zone Consistency Review will be incorporated in the Final EA]]

Tribal Coordination

Tribal Coordination Distribution List

MacDill AFB conducts government-to-government consultation with four federally recognized tribes with a historic or cultural affiliation with MacDill AFB lands, which are listed in **Table A-2** below. Coordination for the IDEA projects entailed

Table A-2. MacDill AFB Tribal Contact List

Tribe	City	State
table sub-heading		
Miccosukee Tribe of Indians	Miami	FL
Seminole Tribe of Florida	Hollywood	FL
The Seminole Nation of Oklahoma	Wewoka	OK
The Muscogee (Creek) Nation	Okmulgee	OK

Example Tribal Notification Letter

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

19 January 2024

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

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

Dear Mr. Cypress

MacDill Air Force Base (AFB), Florida is preparing an Installation Development Environmental Assessment (IDEA) to address implementation of selected facilities and infrastructure improvement projects for the next five fiscal years (FYs), FY 2025 through FY 2030, at various locations across the installation (see Attachments 1, 2, and 3). The purpose of the Proposed Action is to provide facilities, infrastructure, and functionality improvements necessary to support the missions of the 6 Air Refueling Wing and MacDill AFB mission partners. The Proposed Action is needed to address deficiencies of function and capability in the facilities and infrastructure at MacDill AFB that result from obsolescence, deterioration, and evolving mission needs. These deficiencies are remedied through an ongoing process of construction of new facilities and infrastructure, renovation of existing facilities, and demolition of redundant or obsolete facilities. Left unchecked, these deficiencies degrade the ability of the installation to meet the Department of the Air Force (DAF) and Department of Defense (DoD) current and future mission requirements relative to state and federal requirements. In accordance with the National Environmental Policy Act (NEPA), MacDill AFB is preparing the IDEA to evaluate the potential environmental effects associated with the Proposed Action.

In accordance with Executive Order (EO) 13175, *Consultation with Indian Tribal Governments*, the DAF would like to initiate government-to-government consultation on the proposed installation development projects at MacDill AFB. The DAF desires to discuss the proposal in detail with you so that we may understand and consider any comments, concerns, and suggestions you may have. This letter also initiates our consultation under Section 106 of the National Historic Preservation Act (Code of Federal Regulations, Title 36, Part 800) and requests your input. The DAF will continue to contact your tribe under NEPA, and consult with your tribe under EO 13175, unless you request otherwise. Details on the Proposed Action are provided below.

MacDill AFB has identified nine construction, renovation, or demolition projects that would enhance current and future mission and operational efficiency. MacDill AFB would implement all proposed short-term infrastructure projects as summarized in the Proposed

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defined as any area where ground disturbance would occur; this includes the staging areas for equipment and materials. The upcoming IDEA will include analysis of alternatives (e.g., construction location, new construction versus renovation, etc.), including a No Action Alternative.

All tribal, agency, and stakeholder comments provided to the DAF will be considered during preparation of the IDEA. We respect the unique government-to-government relationship that exists between the DAF and your tribe, and your input on the project is welcome at any time during the NEPA process. However, to ensure we have sufficient time to consider your input in the Draft IDEA, please respond within thirty (30) days of receipt of this letter to Mr. Jason Kirkpatrick, ATTN: MacDill IDEA, 7621 Hillsborough Loop Drive, MacDill AFB, FL 33621 or via email at jason.kirkpatrick.2.ctr@us.af.mil.

Please let us know when you would be available to discuss the proposed installation development projects and your expectations on how to proceed with consultation. Please contact Ms. Amy Doye at (813) 828-3577 to discuss dates and times for consultation or with any comments or questions regarding this project.

Sincerely

ADAM D. BINGHAM, Colonel, USAF
Commander

3 Attachments:
1. MacDill AFB Location Map, 15 Nov 2023
2. Proposed Project List, 15 Nov 2023
3. Proposed Project Locations Map, 15 Nov 2023

cc:
Dr. Paul Backhouse

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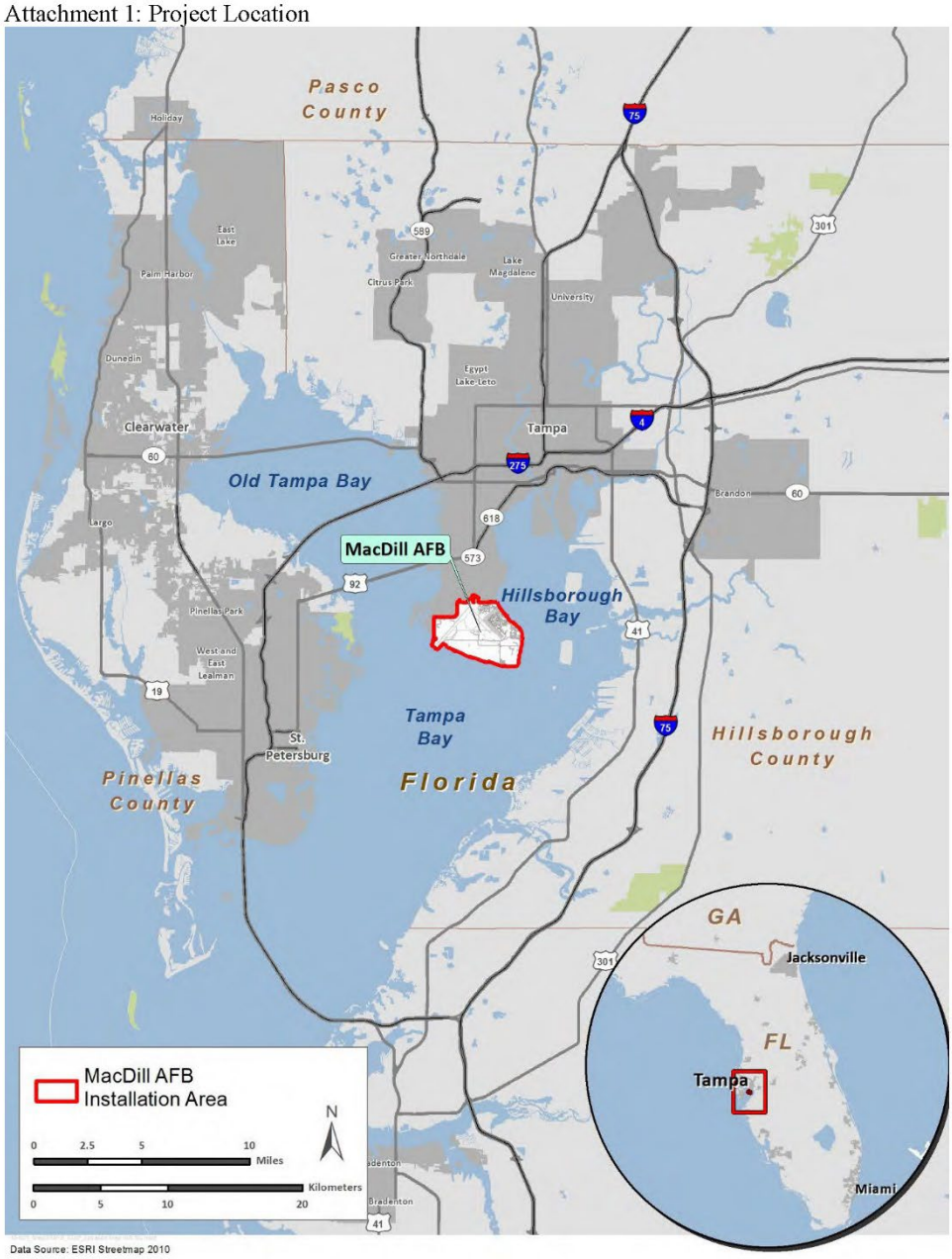
Attachment 1: Project Location



4

Attachment 2: Proposed Project List

Project ID	Project Number	Build Year	Project Title	Estimated Total Area Impacted (SF)	Added Impervious Surface (SF)	Project Description
1	NVZR180060	FY25	Widen Zemke Avenue F1241	8,000	8,000	Construct additional lane on Zemke Ave between S Boundary Blvd and Bayshore Blvd to alleviate traffic congestion.
2	NVR190077	FY27	Construct Delta Apron (DUC Ramp)	20,000	20,000	Add new shoulder pavement onto existing DUC ramp and repair existing DUC ramp.
3	NVZR190085	FY25	Construct Northern Boundary Fence F1260	300,000	-15,600 + 6,300	Construct ~6,000 LF new installation boundary fence and relocate exiting walking path managed by City of Tampa. Fence requires a 25' easement be cleared on either side for visual patrol.
4	NVZR173710	FY28	Apron Flood Lighting	275,000	0	Install apron flood lighting along edge of North & South Aprons and Parking Rows 46-52. New electrical connections would be included in construction.
5	Unknown / IDP	Multiple FYs	Culvert Repair and Replacement	N/A	0	Repair and replacement of multiple culverts and headwalls around the installation. Specific culverts are still being identified.
6	NVZR193704	FY29	Joint Operations & Logistics Maintenance Facility (JCSE)	132,000	*0*	Demolish Buildings 848, 860, 861, 863 and 887 and consolidate those activities into more efficient spaces for operations, administration, storage, and deployment staging, and would extend the complex boundary wall to encompass the parking area southeast of complex and associated utilities within the complex.
7	NVZR220042	FY25	Demolish Building 82	7,000	-7,000 SF	Demolish Building 82 and associated infrastructure. Building 82 is unused, unneeded, and its replacement value exceeds its renovation cost.

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Project ID	Project Number	Build Year	Project Title	Estimated Total Area Impacted (SF)	Added Impervious Surface (SF)	Project Description
8	NVZR190031	FY26	Construct Bayshore Gate	25,000	+25,000 SF	Demolition of existing guardhouse and original canopy, and construction of new guardhouse and canopy. Roadway and electrical improvements would be included in the project as well.
9	NVZR180048	FY26	JCSE RUBB Facility Replacement	15,000	0	Demolition of existing steel framed canopy structure and construct new warehouse and office space for JCSE.

Attachment 3: Proposed Project Locations Map

Tribal Responses

Muscogee Creek Nation

From: Section106
To: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE
Subject: [Non-DoD Source] Re: Section 106 Consultation - Installation Development EA at MacDill AFB
Date: Thursday, March 7, 2024 9:33:06 AM

Good morning Mr. Kirkpatrick,

Thank you for providing the project location figures in relation to nearby archaeological sites as well as the Excel Spreadsheet with site information. After further review of the additional materials, it looks like there are no archaeological sites located within any of the project areas. The Muscogee Nation finds that there should be **no adverse effects** to the known historic properties for the construction of the northern boundary fence.

As for the other undertakings, the Muscogee Nation finds that there will be **no effects** to the ineligible sites located nearby. However, due to the historic presence of Muscogee people in the project area, inadvertent discoveries of cultural resources, human remains and related NAGPRA items may occur, even in areas of existing or prior development. Should this occur, the Muscogee (Creek) Nation requests that all work cease and our office as well as other appropriate agencies be notified immediately. Please feel free to contact me if there are any questions or concerns.

Thank you,

Robin Soweka, Jr.
Cultural Resource Specialist, Historic and Cultural Preservation Department
The Muscogee Nation
P.O. Box 580 | Okmulgee, OK 74447
T 918.732.7726 | F 918.758.0649
rosoweka@MuscogeeNation.com
MuscogeeNation.com

From: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE <jason.kirkpatrick.2.ctr@us.af.mil>
Sent: Thursday, March 7, 2024 5:50 AM
To: Section106 <Section106@mcn-nsn.gov>
Cc: Whitworth, Sophie <Sophie.Whitworth@akimasupportops.com>; SUTTON, CHRISTOPHER CTR USAF AMC 6 CES/CEIEC <christopher.sutton.14.ctr@us.af.mil>
Subject: RE: Section 106 Consultation - Installation Development EA at MacDill AFB

Robin; Good morning. Well, those figures I mentioned yesterday came in yesterday afternoon. Attached are close-up views of each work site showing a 1-km radius around the project area and any known archaeological sites within the nearby area. Hopefully these figures give you a better feel for the proposed projects and their relation to archaeological resources. I have also attached our summary of the know archaeological sites that is included in our Integrated Cultural Resource

Management Plan. This summary shows each sites NRHP eligibility. As you can see, most of the arch sites are not eligible, with a couple of notable exceptions being the Runway sites near the Dale Mabry Gate project area (8HI3382 and 8HI14510)

Please let us know if you have any further questions or require additional information for clarification.

We look forward to hearing back from you.

JasonK

JASON KIRKPATRICK, Contractor, Akima Support Operations, LLC
Environmental Element Manager
6 CES/CEIE MacDill Air Force Base
813-614-3756 (NEW)

From: Section106 <Section106@mcn-nsn.gov>
Sent: Wednesday, March 6, 2024 11:41 AM
To: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE <jason.kirkpatrick.2.ctr@us.af.mil>
Subject: [Non-DoD Source] Re: Section 106 Consultation - Installation Development EA at MacDill AFB

Good morning Mr. Kirkpatrick,

Thank you for sending the correspondence regarding the nine construction, demolition, and infrastructure improvement projects located on the MacDill AFB in Hillsborough County, Florida. Could you please send the proposed project information/locations? There were no attachments included within the email.

Thank you,

Robin Soweka, Jr.
Cultural Resource Specialist, Historic and Cultural Preservation Department
The Muscogee Nation
P.O. Box 580 | Okmulgee, OK 74447
T 918.732.7726 | F 918.758.0649
rosoweka@MuscogeeNation.com
MuscogeeNation.com

Seminole Tribe of Florida

From: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE
To: Peer, Deborah; Humphreys, Abbey
Subject: FW: Section 106 Consultation - Installation Development EA at MacDill AFB
Date: Tuesday, March 5, 2024 4:08:33 PM
Attachments: Outlook-lfreszon.png

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

FYSA….additional response from the Seminole Tribe.

JasonK

JASON KIRKPATRICK, Contractor, Akima Support Operations, LLC
Environmental Element Manager
6 CES/CEIE MacDill Air Force Base
813-614-3756 (NEW)

From: Victoria Menchaca <VictoriaMenchaca@semtribe.com>
Sent: Friday, March 1, 2024 9:34 AM
To: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE <jason.kirkpatrick.2.ctr@us.af.mil>
Cc: RIDER, ANDREW W CIV USAF AMC 6 CES/CEI <andrew.rider.2@us.af.mil>; Whitworth, Sophie <Sophie.Whitworth@akimasupportops.com>; THPO Compliance <THPOCompliance@semtribe.com>
Subject: [Non-DoD Source] Re: Section 106 Consultation - Installation Development EA at MacDill AFB

Hi Jason,

Thank you very much for all of information! Yes, please include any known archeological sites within 1km of the project site on each figure.

Sincerely,

Victoria L. Menchaca, MA, Compliance Analyst II

STOF THPO, Compliance Section

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Fax: 863-902-1117

From: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE <jason.kirkpatrick.2.ctr@us.af.mil>
Sent: Thursday, February 29, 2024 10:13 AM
To: Victoria Menchaca <VictoriaMenchaca@semtribe.com>
Cc: RIDER, ANDREW W CIV USAF AMC 6 CES/CEI <andrew.rider.2@us.af.mil>; Whitworth, Sophie <Sophie.Whitworth@akimasupportops.com>; THPO Compliance <THPOCompliance@semtribe.com>
Subject: RE: Section 106 Consultation - Installation Development EA at MacDill AFB

Victoria; Thank you for the quick reply. We will get you revised figures showing the project sites. I presume we should include any known archaeological sites within 1 km of the project site on each figure? Please confirm.

Regarding the Cultural Resources Assessment Surveys, we completed a base wide survey of the entire installation (in two phases) between 2017-2019. A map showing all of the currently identified sites on MacDill AFB is attached, along with a summary of each sites NRHP status. The base wide surveys were completed in accordance with Florida Division of Historic Resources'(FDHR) Module 3 Guidelines for Use by Historic Preservation Professionals.

Thank you

JasonK

JASON KIRKPATRICK, Contractor, Akima Support Operations, LLC

Environmental Element Manager

6 CES/CEIE MacDill Air Force Base

813-614-3756 (NEW)

From: Victoria Menchaca <VictoriaMenchaca@semtribe.com>
Sent: Thursday, February 29, 2024 9:18 AM
To: KIRKPATRICK, JASON W CTR USAF AMC 6 CES/CEIE <jason.kirkpatrick.2.ctr@us.af.mil>
Cc: RIDER, ANDREW W CIV USAF AMC 6 CES/CEI <andrew.rider.2@us.af.mil>; Whitworth, Sophie <Sophie.Whitworth@akimasupportops.com>; THPO Compliance <THPOCompliance@semtribe.com>
Subject: [Non-DoD Source] RE: Section 106 Consultation - Installation Development EA at MacDill AFB

> Some people who received this message don't often get email from victoriamenchaca@semtribe.com. Learn why this is important

Good Morning Jason,

Please see our initial comments in below. I am available to meet with you any time next week except from 9-10 on Tuesday.

Sincerely,

Victoria

February 29, 2024

Jason W. Kirkpatrick

Contractor, Akima Support Operations, LLC

Environmental Element Manager

7621 Hillsborough Loop Dr.

MacDill AFB, FL 33621

Email: jason.kirkpatrick.2.ctr@us.af.mil

Phone: 239-980-2138

Subject: MacDill AFB - Installation Development Environmental Assessment, Hillsborough County, FL

THPO Compliance Tracking Number: 0034262

In order to expedite the THPO review process:

1. Please correspond via email and provide documents as attachments (a THPO FTP site is available for large files),
2. Please send all emails to THPOCompliance@semtribe.com,
3. Please reference the THPO Compliance Tracking Number if one has been assigned.

Dear Jason W. Kirkpatrick,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) Compliance Section regarding the MacDill AFB - Installation Development Environmental Assessment, Hillsborough County, FL.

The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the information that you provided pursuant to Section 106 of the National Historic Preservation Act and its implementing authority, 36 CFR Part 800. For us to complete our review we would like to request the following additional information:

- Could you please provide maps of each of the project areas at a smaller scale?
- Have the proposed project areas been subject to a Cultural Resources Assessment Survey that meets the current requirements of the Florida Division of Historic Resources'(FDHR) Module 3 Guidelines for Use by Historic Preservation Professionals?

We look forward to the delivery of the additional information requested. Please continue to consult with our office and feel free to contact us with any questions or concerns.

Respectfully,

Victoria L. Menchaca, MA, Compliance Analyst II

STOF-THPO, Compliance Review Section

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Subsequent to this request, MacDill AFB provided a mapbook showing locations of the known cultural sites on the installation relative to the proposed IDEA project sites. As indicated in **Section 3.8**, no known cultural sites would be affected by any of the proposed projects.

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B

Public Notices

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Appendix B: Public Notices

Early Public Notice

NOTICE FOR EARLY PUBLIC REVIEW OF A PROPOSED ACTIVITY WITHIN THE 100-YEAR FLOODPLAIN – UNITED STATES AIR FORCE

The Department of the Air Force (DAF) is inviting public input on any practicable alternatives for a proposed activity within the 100-year floodplain at MacDill Air Force Base (AFB). The Proposed Action is implementation of nine facility and infrastructure improvement projects that would involve construction, demolition, and alteration of selected facilities, roads, and parking areas over the next five years at various locations across the installation. The Proposed Action would address deficiencies of function and capability in the facilities and infrastructure at MacDill AFB that result from obsolescence, deterioration, and evolving mission needs. Left unchecked, these deficiencies degrade the ability of the installation to meet the DAF and Department of Defense current and future mission requirements relative to state and federal requirements.

This notice is required by Executive Order 11988 *Floodplains Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and Executive Order 11990 *Protection of Wetlands*. It has been prepared and made available to the public by the DAF in accordance with 32 CFR 989 and Air Force Manual 32-7003 for actions proposed within the 100-year floodplain and within wetlands. The DAF invites public comments on the proposal, including any practicable alternatives to constructing in the floodplain or wetland areas. The Proposed Action will be analyzed in a forthcoming Environmental Assessment (EA) and the public will have the opportunity to comment on the Draft EA when it is released.

The public comment period ends 30 days after the date of this notice. Please submit written comments to: 6 ARW Public Affairs, RE: MacDill IDEA, 8209 Hangar Loop Drive, Suite 14, MacDill AFB, FL 33621-5502 or by email to 6.arw.pa@us.af.mil with reference to MacDill AFB IDEA in the subject line. Requests for information on the project can be made by phone to (812) 263-9331.

PRIVACY ADVISORY NOTICE

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

***** The early public notice for the project was published in the local newspapers on March 6, 2024 with public input requested 30 days of the publication (by April 5, 2024).

LEGAL NOTICE

NOTICE
CITY OF CLEARWATER
GENERAL ELECTION
March 19, 2024

The City of Clearwater Municipal Election, for the purpose of electing three City Councilmembers (Seat 1 – Mayor, Seat 2, and Seat 3) for a four-year term, will be held Tuesday, March 19, 2024, between the hours of 7:00 a.m. and 7:00 p.m.

All qualified electors who are residents of the City of Clearwater and who have registered on the registration books of the Supervisor of Elections of the County of Pinellas, as provided by law, shall be qualified to vote in this election.

Rosemarie Call, MPA, MMC
City Clerk
Clearwater, Florida

1/5/24, 2/26/24, 3/6/24, 3/13/24

LEGAL NOTICE

AVISO
CIUDAD DE CLEARWATER
ELECCIÓN GENERAL
19 de marzo de 2024

Las Elecciones Municipales de la Ciudad de Clearwater, con el fin de elegir a tres Miembros del Consejo de la Ciudad (Asiento 1 - Alcalde, Asiento 2 y Asiento 3) por un período de cuatro años, se llevará a cabo el 19 de marzo de 2024 en el horario de las 7:00 a.m. a las 7:00 p.m.

Todos los electores calificados que sean residentes de la Ciudad de Clearwater y que se hayan inscrito en los libros de registro del Supervisor de Elecciones del Condado de Pinellas, como lo dispone la ley, estarán calificados para votar en esta elección.

Rosemarie Call, MPA, MMC
Secretaria de la Ciudad
Clearwater, Florida

1/5/24, 2/26/24, 3/6/24, 3/13/24

LEGAL NOTICE

NOTICE OF CITY OF CLEARWATER REFERENDUM ELECTION

A **Referendum Election** of the City of Clearwater, Florida, will be held in conjunction with the General Election on Tuesday, March 19, 2024, between the hours of 7:00 a.m. and 7:00 p.m., for the purpose of submitting to the voters of the City of Clearwater the following ballot question:

CREATING AN ELECTION RUN-OFF SYSTEM AND CHANGING CLEARWATER'S ELECTION DATES TO MAKE THAT SYSTEM POSSIBLE

Shall the City of Clearwater charter be amended to require a run-off election, beginning in the year 2026, for each Council seat in which no candidate receives more than 50% of the vote in the regular city election? As described in City Ordinance 9728-23, this amendment will also change Clearwater's regular election from March of even-numbered years to August of even-numbered years. The run-off elections, when necessary, will be held in November of even-numbered years.

YES _____
NO _____

All qualified electors who are residents of the City of Clearwater and who have registered on the registration books of the Supervisor of Elections of the county of Pinellas, as provided by law, shall be qualified to vote in this election. Copies of the full text resolution establishing the ballot question are available at Official Records & Legislative Services.

City of Clearwater
600 Cleveland Street, Suite 600
Clearwater, FL 33755

Rosemarie Call, MPA, MMC
City Clerk

01/03, 02/28, 03/06, 03/13/24

LEGAL NOTICE

AVISO DE LA CIUDAD DE CLEARWATER ELECCIÓN DE REFERÉNDUM

La elección de referéndum de la Ciudad de Clearwater, Florida, se llevará a cabo en conjunto con la elección general el martes 19 de marzo de 2024, en un horario de 7:00 a. m. a 7:00 p. m., con el fin de presentar a los votantes de la ciudad de Clearwater la siguiente propuesta:

CREAR UN SISTEMA DE SEGUNDA VUELTA ELECTORAL Y CAMBIAR LAS FECHAS DE LAS ELECCIONES DE CLEARWATER PARA QUE ESE SISTEMA SEA POSIBLE

¿Se deben enmendar los estatutos de la Ciudad de Clearwater para requerir una segunda vuelta, a partir del año 2026, para cada escaño del concejo en el que ningún candidato reciba más del 50% de los votos en la elección regular municipal? Como se describe en la Ordenanza de la Ciudad 9728-23, esta enmienda también cambiará la elección regular de Clearwater de marzo de los años pares a agosto de los años pares. Las elecciones de segunda vuelta, cuando sean necesarias, se celebrarán en noviembre de los años pares.

sí _____
NO _____

Todos los electores calificados que sean habitantes de la Ciudad de Clearwater y que se hayan registrado en los libros de registro de la Supervisora Electoral del condado de Pinellas, como lo dispone la ley, estarán calificados para votar en esta elección. Las copias del texto completo de la resolución que establece la propuesta se encuentran disponibles en el Departamento de Registros Oficiales y Servicios Legislativos.

City of Clearwater
600 Cleveland Street, Suite 600
Clearwater, FL 33755

Rosemarie Call, MPA, MMC
Secretaria de la ciudad

01/03, 02/28, 03/06, 03/13/24

LEGAL NOTICE

NOTICE OF AMENDMENTS TO THE LAND DEVELOPMENT CODE FOR PASCO COUNTY

The Pasco County Board of County Commissioners proposes to adopt the following:

AN ORDINANCE BY THE PASCO COUNTY BOARD OF COUNTY COMMISSIONERS AMENDING THE PASCO COUNTY LAND DEVELOPMENT CODE; SECTION 304.1 TYPES OF PUBLIC NOTICE, TABLE 304-1 REQUIRED PUBLIC NOTICE FOR DEVELOPMENT APPROVAL APPLICATIONS; SECTION 402.1.B ZONING AMENDMENTS – EUCLIDEAN, SUBMITTAL REQUIREMENTS; SECTION 404.3.D MINING OPERATING PERMITS, APPLICATION REQUIREMENTS; SECTION 404.4.D CONSTRUCTION AND DEMOLITION DEBRIS DISPOSAL FACILITIES OPERATING PERMITS, APPLICATION REQUIREMENTS; SECTION 404.6.C YARD TRASH PROCESSING FACILITIES, APPLICATION REQUIREMENTS; SECTION 408.1.8 PERMANENT SIGNS EXEMPT FROM OBTAINING SIGN PERMITS AND TEMPORARY SIGNS; SECTION 408.5.D RIGHT-OF-WAY USE PERMIT, APPLICATION REQUIREMENTS; SECTION 408.8.D GARDEN PLAN PERMITS, APPLICATION REQUIREMENTS; SECTION 611.8 R-MH MOBILE HOME DISTRICT, YARD REGULATIONS; SECTION 611.8 R-MH MOBILE HOME DISTRICT, STREETS AND ROADS; SECTION 803.2 LISTED SPECIES, IMPACTS TO LISTED AND PROTECTED SPECIES; SECTION 901.3.E ACCESS MANAGEMENT, ACCESS MANAGEMENT ANALYSIS/TRAFFIC IMPACT STUDY; 901.3 ACCESS MANAGEMENT, SAMPLE PROBLEM NO. 1; APPENDIX A DEFINITIONS; AND OTHER SECTIONS, AS NECESSARY, FOR INTERNAL CONSISTENCY; PROVIDING FOR APPLICABILITY; REPEALER; PROVIDING FOR SEVERABILITY; INCLUSION INTO THE LAND DEVELOPMENT CODE, AND AN EFFECTIVE DATE.

On Thursday, March 21, 2024, at 1:30 p.m., the Pasco County Planning Commission convened as the Local Planning Agency will hold a public hearing at the West Pasco Government Center, Board Room, 8731 Citizens Drive, New Port Richey, Florida.

On Wednesday, April 10, 2024, at 1:30 p.m., the Board of County Commissioners will hold a public hearing at the Historic Pasco County Courthouse, Board Room, 2nd Floor, 37918 Meridian Avenue, Dade City, Florida.

On Tuesday, April 23, 2024, at 1:30 p.m., the Board of County Commissioners will hold a hybrid virtual public hearing at the West Pasco Government Center, Board Room, 8731 Citizens Drive, New Port Richey, Florida.

Information concerning this matter will be on file and available for examination by appointment only in the office of the Pasco County Planning and Economic Growth Department, West Pasco Government Center, 8731 Citizens Drive, Suite 360, New Port Richey, Florida 34654, or anytime on our website: www.pascocountyfl.net. To make an appointment or for further information, you may call 727-847-8140. All interested parties may participate in the public hearing and be heard. To learn how to participate in this hearing virtually, which requires advance registration, please visit https://www.pascocountyfl.net/government/agendas___minutes_.php.

Any person desiring to appeal any decision made by the Pasco County Local Planning Agency and/or Board of County Commissioners with respect to any matter considered at any hearing will need a record of the proceedings and may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based. Persons may obtain a verbatim record of the proceeding by contacting the Clerk and Comptroller's Office, East Pasco Government Center, 14326 6th Street, Suite 201, Dade City, Florida 33523-3414; or at (352) 521-4345.

For questions or inquiries about this meeting, members of the public can reach out to the County's Customer Service Center (727) 847-2411 or County Administration (727) 847-8115 or visit www.mypasco.net. To view the Local Planning Agency and Board of County Commissioners Agenda, please visit https://www.pascocountyfl.net/government/agendas___minutes_.php.

If you are a person with a disability who needs any accommodation in order to participate in this proceeding, you are entitled, at no cost to you, to the provision of certain assistance. Please contact County's Human Resources Department, Internal Services Building, 7536 State Street, New Port Richey, FL 34654, (727) 847-8030 (V) at least 7 days before the public hearing, or immediately upon receiving this notification if the time before the public hearing is less than 7 days; If you are hearing or voice impaired, call 711.

PASCO COUNTY LOCAL PLANNING AGENCY
PASCO COUNTY BOARD OF COUNTY COMMISSIONERS
PEG24-049

March 6, 2024

LEGAL NOTICE

NOTICE TO RESCIND RIVER RIDGE DEVELOPMENT OF REGIONAL IMPACT (DRI)

PUBLIC NOTICE is hereby given that on Tuesday, March 26, 2024, at 10:30 a.m., the Pasco County Board of County Commissioners will hold a hearing at the West Pasco Government Center, Board Room, 8731 Citizens Drive, New Port Richey, Florida.

The applicant, NG Development Corporation, has filed an application to rescind the Development Order of River Ridge Development of Regional Impact #74 (DRI). The River Ridge project will remain regulated by the Pasco Comprehensive Plan and the River Ridge Master Planned Unit Developments (MPUD). The subject property is located generally on the north side of Decubellis Road, south of Ridge Road approximately 1.5 miles east of Little Road, and contains 1406.16 acres m.o.l.

Information concerning this matter will be on file and available for examination by appointment only in the office of the Pasco County Planning and Economic Growth Department, West Pasco Government Center, 8731 Citizens Drive, Suite 360, New Port Richey, Florida 34654, or anytime on our website: www.pascocountyfl.net. To make an appointment or for further information, you may call 727-847-8140. All interested parties may participate in the public hearing and be heard. To learn how to participate in this hearing virtually, which requires advance registration, please visit https://www.pascocountyfl.net/government/agendas___minutes_.php.

Any person desiring to appeal any decision made by the Planning Commission or the Pasco County Board of County Commissioners with respect to any matter considered at any hearing will need a record of the proceedings and may need to ensure that a verbatim record of the proceedings is made which includes the testimony and evidence upon which the appeal is to be based. Persons may obtain a verbatim record of the proceeding by contacting the Clerk and Comptroller's Office, East Pasco Government Center, 14326 6th Street, Suite 201, Dade City, Florida 33523-3414; or at (352) 521-4345.

For questions or inquiries about this meeting, members of the public can reach out to the County's Customer Service Center (727) 847-2411 or County Administration (727) 847-8115 or visit www.mypasco.net. To view the Local Planning Agency and Board of County Commissioners Agendas, please visit https://www.pascocountyfl.net/government/agendas___minutes_.php.

If you are a person with a disability who needs any accommodation in order to participate in this proceeding, you are entitled, at no cost to you, to the provision of certain assistance. Please contact the County's Human Resources Department, Internal Services Building, 7536 State Street, New Port Richey, Florida 34654, (727) 847-8030 (V) at least 7 days before the public hearing, or immediately upon receiving this notification if the time before the public hearing is less than 7 days; if you are hearing or voice impaired, call 711.

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS
PEG24-051

March 6, 2024

LEGAL NOTICE

NOTICE FOR EARLY PUBLIC REVIEW OF A PROPOSED ACTIVITY WITHIN THE 100-YEAR FLOODPLAIN – UNITED STATES AIR FORCE

The Department of the Air Force (DAF) is inviting public input on any practicable alternatives for a proposed activity within the 100- year floodplain at MacDill Air Force Base (AFB). The Proposed Action is implementation of nine facility and infrastructure improvement projects that would involve construction, demolition, and alteration of selected facilities, roads, and parking areas over the next five years at various locations across the installation. The Proposed Action would address deficiencies of function and capability in the facilities and infrastructure at MacDill AFB that result from obsolescence, deterioration, and evolving mission needs. Left unchecked, these deficiencies degrade the ability of the installation to meet the DAF and Department of Defense current and future mission requirements relative to state and federal requirements.

This notice is required by Executive Order 11988 *Floodplains Management*, as amended by EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, and Executive Order 11990 *Protection of Wetlands*. It has been prepared and made available to the public by the DAF in accordance with 32 CFR 989 and Air Force Manual 32-7003 for actions proposed within the 100-year floodplain and within wetlands. The DAF invites public comments on the proposal, including any practicable alternatives to constructing in the floodplain or wetland areas. The Proposed Action will be analyzed in a forthcoming Environmental Assessment (EA) and the public will have the opportunity to comment on the Draft EA when it is released.

The public comment period ends 30 days after the date of this notice. Please submit written comments to: 6 ARW Public Affairs, RE: MacDill IDEA, 8209 Hangar Loop Drive, Suite 14, MacDill AFB, FL 33621-5502 or by email to 6.arw.pa@us.af.mil with reference to MacDill AFB IDEA in the subject line. Requests for information on the project can be made by phone to (812) 263- 9331.

PRIVACY ADVISORY NOTICE

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

3/6/2024

C

Sustained Compliance Measures

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Appendix C: Sustained Compliance Actions

In addition to BMPs, this IDEA has identified a series of sustained compliance actions that are currently in place for MacDill AFB, and that would continue to be implemented under the Proposed Actions in accordance with applicable regulations or DAF guidance. These compliance actions are routine and standard practices and are not specific to the Proposed Actions in this IDEA. These actions would continue to be implemented under the Proposed Actions to reduce the potential for environmental impacts. **Table C-1** presents the compliance actions by resource area.

Table C-1. Sustained Compliance Actions

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
Noise	• Operation of heavy construction equipment would occur during normal weekday business hours in areas adjacent to noise sensitive land uses such as residential and recreational areas. • Heavy equipment mufflers would be properly maintained and in good working order. • Personnel, particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.
Biological Resources	MacDill Air Force Base (AFB) would continue to implement mitigation measures recommended in the Florida's Imperiled Species Management Plan 2016-2026 and the Migratory Bird Treaty Act to reduce or avoid potential construction impacts on migratory birds: • Groundbreaking construction activities or tree-cutting activities would be performed before migratory birds return to MacDill AFB or after all young have fledged to avoid incidental take. • If construction is scheduled to start during the period when migratory birds are present, a site-specific survey for nesting migratory birds would be performed immediately prior to construction by a qualified biologist. • If nesting birds are found during the survey, buffer areas would be established around nests. Construction would be deferred in buffer areas until birds have left the nest. A qualified biologist will confirm that all young have fledged. MacDill AFB would continue to adhere to measures protective of the Florida burrowing owl and gopher tortoise as outlined in the Integrated Natural Resources Management Plan (INRMP). Additionally, routine surveys of the installation would continue to determine presence of protected species.
Cultural Resources	Personnel would adhere to procedures for the inadvertent discovery of cultural resources or human remains as outlined in the Integrated Cultural Resources Management Plan.
Socioeconomics	No installation-specific actions are identified.
Soils and Geology	Geotechnical soils tests would be conducted prior to or during construction and demolition activities to determine if limitations exist and implement appropriate environmental/engineering protection measures. Measures from project-specific and installation Stormwater Pollution Prevention Plans and Erosion and Sediment Control Plans would be implemented to minimize erosion, sedimentation, and stormwater runoff, such as: • Silt fencing • Sediment traps • Application of water to disturbed soils • Revegetation of disturbed areas with native plants
Water Resources	Measures from the Spill Prevention, Control, and Countermeasure Plan, including requirements for secondary containment, would be implemented as described for Hazardous Materials and Wastes. Erosion and sediment controls would be implemented as described for Geological Resources.

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	To minimize impacts from sedimentation on water quality, installations would be required to obtain a National Pollutant Discharge Elimination System General Permit for all construction activities affecting more than 1 acre. Following the guidance provided by Section 438 of the Energy Independence and Security Act, MacDill AFB would ensure that post-project hydrology mirrors pre-project hydrology on and around the project areas, to the maximum extent technically feasible, with respect to temperature, rate, volume, and flow duration. Per Executive Order (EO) 14008, *Tackling the Climate Crisis at Home and Abroad*, Department of Defense (DoD) Unified Facilities Criteria 2-100-01, *Installation Master Planning*, and the DoD's 2021 *Climate Adaptation Plan*, planning, design, and construction of new facilities and infrastructure on the installations would incorporate measures, strategy, and technology to promote climate resiliency to the extent practicable. Required development designs or measures (MacDill AFB 2022a) would be implemented to avoid flooding impacts on facilities and infrastructure and include: • Per EO 11988, *Floodplain Management*, and the Federal Flood Risk Management Standard: o For the construction of new facilities, floodplain mitigations would be accomplished through elevating the facility above the 100-year flood elevation; mission critical facilities must be constructed 3 feet above the base flood elevation and non-mission critical facilities must be elevated 2 feet above the flood elevation. o For facility renovation that exceed 50 percent of the facility replacement cost, flood mitigation measures would include locating critical infrastructure (e.g., electrical and heating, ventilation, and air conditioning systems) above the flood elevation whenever practical. • Per the Southwest Florida Water Management District (SWFWMD), the proposed new construction and renovations actions would be subject to the following requirements: o Construction projects that create more than 4,000 square feet of impervious and semi-impervious surfaces for new facility construction or addition, or 9,000 square feet of impervious and semi-impervious surface for vehicle traffic, shall require application for an Environmental Resource Permit through the SWFWMD. o Design measures for construction of new facilities would include elevating the facility above the 100-year floodplain as well as the construction of appropriately sized stormwater management features, such as drainage swales and detention basins, to compensate for the increase in impervious surface. o When expanding an existing facility through construction of an addition, it is impractical to elevate the addition above the floodplain; however, facility additions that create more than 4,000 square feet of new impervious and semi-impervious surface area would require construction of stormwater mitigation measures such as drainage swales or stormwater detention basins. o The construction of facility infrastructure projects, such as roadways and parking lots, shall also include design measures to mitigate flooding impacts. Infrastructure projects that create an increase in impervious and semi-impervious surface of more than 9,000 square feet shall require construction of stormwater management features such as drainage swales and/or detention basins.

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	○ All drainage swales or stormwater detention basins shall be designed to provide for water quality and quantity treatment sufficient to handle a 25-year, 24-hour storm event. • In addition to project-specific avoidance, minimization, and mitigation measures, MacDill AFB implements the following installation-wide projects to combat impacts from climate change and severe weather and prevent further exacerbation of climate change impacts: ○ ***Oyster Reef Shoreline Stabilization Project.*** MacDill AFB, U.S. Fish and Wildlife Service and regional partners designed and implemented a living shoreline project starting in 2004 that protects 1.6 miles of base coastline. By engineering with nature, this ongoing project helps to mitigate the effects of climate change by creating a natural shoreline stabilization system that will adjust to changes in sea level to control shoreline erosion from heavily trafficked shipping lanes in Tampa Bay. The shoreline is composed of oyster reefs from man-made structures, fossilized shells, and coastal marsh plants to decrease wave energy, increase sediment accumulation, increase water quality through oyster filtration, increase biodiversity and provide potential habitat for several marine species. This project helps to protect portions of remaining undeveloped shoreline in the Tampa Bay region. Six phases of work have been completed to date. ○ ***Surface Water Improvement and Management Restoration.*** MacDill AFB and the SWFWMD's Surface Water Improvement and Management Program, along with other project partners, designed and implemented a three-phase project to improve intertidal and freshwater wetland habitats on MacDill AFB. The project goals were to treat stormwater runoff and improve habitat. This project consisted of invasive species removal, regrading of soils to appropriate elevations, installation of new infrastructure to improve storm water flow, and replanting of the habitats with appropriate native vegetation. The restored wetland habitats and improved storm infrastructure created increased water quality improvements by slowing storm water discharges into the bay, which is especially important given anticipated increases in frequency and duration of storms due to climate change. In addition, these improved habitats will better enable the natural areas at MacDill to adapt to anticipated sea level rise and storm surge effects from increased severe weather. ○ ***Airfield Drainage Project.*** MacDill AFB's airfield required restoration of poor drainage and low-lying areas and to reduce BASH. MacDill AFB and the BASH Group designed and implemented a mitigation project to compensate for lost wetland habitats as a result of this required work. The resulting projects restored freshwater and saltwater wetland areas within altered areas on the southern portion of the installation. These restored habitats improved natural stormwater flow and continue to provide increased natural water quality improvements by slowing stormwater discharges into the bay, which is especially important given anticipated increases in frequency and duration of storms due to climate change. The enhanced habitats also created enhanced adaptability of natural habitats to anticipated sea level rise and storm surge effects from increased severe weather. ○ ***Mangrove Restoration.*** MacDill AFB, Ash Engineering, and Ecosphere Restoration Institute designed and implemented a multi-phase project to restore mangrove and wetland habitats along the southern end of the installation. The goals of the project were to restore hydrologic conditions, create and enhance habitat, and control invasive and nuisance species. Mosquito ditch spoil mounds within mangrove swamps were removed via hydro blasting to restore appropriate elevations, hydrology, and salterns, and freshwater marshes were re-created in areas where they likely had historically been located. In areas, native plants were installed to help

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	accelerate recruitment of natural habitat and compete against potential invasive plant species. Secondary project goals include water quality improvements through increased biological filtration of runoff; storm surge protection through natural coastal buffer habitat; and enhanced adaptability of natural habitats to anticipated changes in climate, sea level rise, and storm surge effects from increased severe weather. The project is on-going with several phases remaining to be completed. ○ ***Climate Change Ecosystem Assessment.*** All DoD installations with natural resources on their property are required to assess the effects of climate changes on their respective ecosystems according to the Sikes Act. The DoD released additional guidance in 2019 for incorporating climate change considerations into installation INRMPs. A climate change analysis specific to MacDill AFB was developed by Colorado State University in March 2019 and is included in the INRMP. The analysis provided guidance for assessing risk to built and natural infrastructure on the installation based on forecast modelling of different projected climate change scenarios. Additionally, the analysis provided information for installation stakeholders to consider when evaluating management action options for addressing natural resources issues. ○ ***Severe Weather/Climate Change Risk Assessment***. The Department of the Air Force (DAF) required each base complete a Severe Weather/Climate Change Screening and Risk Assessment of over 20 weather phenomena. MacDill AFB completed the assessment and reported their findings back to the Air Force Civil Engineer Center in December 2020. MacDill AFB will work with the Air Force Civil Engineer Center to develop mitigation strategies for the effects of severe weather and climate change. One current strategy is to move existing electrical service from overhead to underground, which has increased the resiliency of the base electric network and proven successful during recent tropical storm events. ▪ ***Hurricanes***. MacDill AFB has an active emergency management program which plans and drills the installation's response and recovery to tropical events. MacDill personnel prepare facilities and infrastructure for the weather event, maintain continuity of operations at hardened alternate facilities, and respond to recover installation operations quickly. MacDill AFB staff coordinate emergency management activities with local partners through Emergency Operation Centers using Federal Emergency Management Agency Incident Command System protocols. ▪ ***Lightning.*** The Tampa Bay Region is one of the most active areas in the country for lightning activity. MacDill AFB has protocols in place when lightning is detected within 5 miles of the installation. A warning goes out through several media avenues telling people to take cover and sounding an all clear when the threat has passed. ▪ ***Sea Level Rise.*** The long-term impacts of sea level rise are being worked through by MacDill AFB and their regional partners. Tampa Bay Regional Planning Council created a Regional Resiliency Coalition under which six counties and over 20 cities signed a Memorandum of Understanding to develop a Regional Resiliency Action Plan, which guides communities in hazard assessment and to develop policies and projects to mitigate the impacts of climate change and severe weather. MacDill AFB staff actively participate in the Regional Resiliency Coalition and the Regional Resiliency Action Plan development. Based on sea level rise projections from the National Oceanic and Atmospheric Administration and U.S. Army Corps of Engineers, MacDill AFB's built environment would fare well through the 2080-2100 timeframe under liberal seal level growth. The installation's natural infrastructure, especially along the southern boundary of the installation, are most susceptible to sea

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	level rise flooding, causing wildlife migration to dryer, upland areas. MacDill AFB will conduct follow-up planning to anticipate the long-term impacts.
Infrastructure and Transportation	To ensure mission sustainment over the intended lifespan of the infrastructure and assets, installation planning and project designs for construction of new facilities would be conducted in accordance with the policies and requirements identified for Water Resources. Erosion and sediment controls would be implemented as described for Geological Resources. Measures to preserve hydrologic conditions during and after construction of new facilities and infrastructure would be implemented as described for Water Resources. During construction: • Contractors would adhere to the Integrated Solid Waste Management Plan to minimize construction and demolition debris sent to the landfill. • Deliveries would be scheduled outside of peak periods of inbound traffic. • Workers would use alternative gates to reduce congestion at the installations' main gate. As appropriate, MacDill AFB would implement measures to reduce gate congestion, such as: • Adjusting operational schedules • Upgrading entry gates • Providing additional personnel at gates to process security checks during peak hours
Land Use	Construction contractors would coordinate with appropriate installation managers to ensure development is conducted in accordance with existing land use controls.
Hazardous Materials and Waste	Temporary aboveground storage tanks would be installed for onsite storage of petroleum products for construction, renovation, and demolition projects. Construction contractors would implement best management practices associated with storage of hazardous materials, including: • Secondary containment • Recurring inspections • Spill kit use as required Construction contractors would dispose hazardous materials in accordance with federal and state laws and installation-specific hazardous waste management plans.

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	Prior to the start of any construction or demolition, MacDill AFB would coordinate with the Environmental Restoration Program office to ensure that ground disturbance is coordinated with ongoing remediation and investigation activities. All applicable land use controls would be followed before, during, and after construction, renovation, and demolition. Construction contractors would implement groundwater control measures should contaminated groundwater be encountered, including proper storage and handling of hazardous materials and waste containers in assigned areas, use of secondary containment for hazardous materials and wastes, use of dry clean-up methods to collect spills, use of oil water separators, and regular maintenance of stormwater drainage conveyance areas. Any existing groundwater monitoring wells or treatment systems would be protected or relocated during ground-disturbing activities. Construction contractors would immediately stop work, report the discovery of undocumented contaminated soil or groundwater, and implement appropriate safety measures. Buildings proposed for renovation or demolition would be surveyed for hazardous materials and toxic substances, as necessary, prior to work activities. Contractors would wear appropriate personal protective equipment and adhere to all federal, state, and local regulations; the asbestos-containing materials management plan; and lead-based paint management plan.
Health and Safety	Personnel would implement applicable DAF Occupational Safety and Health and Occupational Safety and Health Administration requirements during construction, renovation, and demolition projects.
Air Quality	Construction contractors would employ best management practices and environmental control measures, to the greatest extent applicable, as follows: • All stockpiles of excavated materials located within construction areas would be completely covered with tarping and sufficiently weighted down to prevent dust and material from entering other airfield pavement areas outside the barricaded area. • During construction and operation, use of electricity from the installation would be used preferentially over the use of generators. All generator use would be pre-approved by the installation Air Quality Manager and adhere to applicable permit conditions. • All non-road diesel equipment would comply with the Federal Clean Air Nonroad Diesel Rule, which regulates emissions from nonroad diesel engines and sulfur content in nonroad diesel fuel. • Dust suppression techniques would be used during construction to reduce air pollution. Recommended methods include application of water, soil stabilizers, or vegetation; use of wind break enclosures; use of covers on soil stockpiles and dump truck loads; use of silt fences; suspension of earth-movement activities during high-wind conditions (gusts exceeding 25 miles per hour), revegetation of disturbed areas, and conducting road sweeping to reduce fugitive dust and mud tracking onto roadways. • To the greatest extent feasible, measures to reduce diesel emissions would be implemented. These measures could include: switching to cleaner fuels, retrofitting current equipment with emission reduction technologies, repowering older equipment with modern engines, replacing older vehicles, and reducing idling through operator training and contracting policies.

Resource	Sustained Compliance Actions to Avoid or Minimize Impacts on Environmental Resources
	In an effort to reduce energy consumption, reduce dependence on petroleum, and increase the use of renewable energy resources in accordance with the goals set by EOs, the Energy Policy Act of 2005, and the DoD Strategic Sustainability Performance Plan, the DAF has a sustainability program in place for reducing CO_2e emissions through increases in energy/fuel efficiency and using renewable sources where possible.
Environmental Justice and Other Sensitive Receptors	Ongoing implementation of the sustained compliance actions identified for the Proposed Actions would continue to avoid or minimize effects on populations within the region of influence, including minority and low-income populations, and other sensitive receptor populations (such as children and elderly) within those communities.

Key: INRMP – Integrated Natural Resources Management Plan; DAF = Department of the Air Force; EO = Executive Order; DoD = Department of Defense; SWFWMD = Southwest Florida Water Management District; CO_2e = carbon dioxide equivalent

D

Air Quality Analysis Supporting Documentation

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Appendix D: Air Quality Analysis Supporting Documentation

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 a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.23a

a. Action Location:
Base: MACDILL AFB
State: Florida
County(s): Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Installation Development at MacDill AFB, Florida

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2025

e. Action Description:

The Proposed Action includes implementation of nine installation development projects including three facility construction projects, five infrastructure construction and repair projects, and one demolition project. Each project was treated as a discrete proposed action; therefore, air emissions were modeled for each project separately.

The analysis assumes construction for each of the infrastructure and improvement projects would occur over a 1-year period. Implementation years used for each project are listed in Section 2, Table 2-1 of the EA. The implementation years listed in Section 2, Table 2-1 represent the federal government's fiscal year, which runs from October of one calendar year through September of the Next calendar year (e.g., fiscal year 2025 runs from October 2024 through September 2025). However, a 1-calendar year construction/renovation/demolition period was used in this analysis to equate a worse-case emissions scenario in which all activity for a single project occurs in the same calendar year. The actual construction/renovation/demolition period may be different than what was assumed for the analysis.

f. Point of Contact:
Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

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

____ applicable
_X_ not applicable

Total reasonably foreseeable 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., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses 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*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action’s potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (hsba.e., not exceeding any National Ambient Air Quality Standard (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 pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

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

Analysis Summary:

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.417	250	No
NOx	3.558	250	No
CO	4.623	250	No
SOx	0.007	250	No
PM 10	9.139	250	No
PM 2.5	0.143	250	No
Pb	0.000	25	No
NH3	0.007	250	No

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.222	250	No
NOx	1.147	250	No
CO	1.718	250	No
SOx	0.003	250	No
PM 10	0.533	250	No
PM 2.5	0.042	250	No
Pb	0.000	25	No
NH3	0.003	250	No

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)

NOT IN A REGULATORY AREA			
VOC	0.116	250	No
NOx	0.954	250	No
CO	1.279	250	No
SOx	0.002	250	No
PM 10	1.236	250	No
PM 2.5	0.039	250	No
Pb	0.000	25	No
NH3	0.002	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.064	250	No
NOx	0.494	250	No
CO	0.829	250	No
SOx	0.001	250	No
PM 10	1.210	250	No
PM 2.5	0.015	250	No
Pb	0.000	25	No
NH3	0.002	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.691	250	No
NOx	1.382	250	No
CO	1.906	250	No
SOx	0.004	250	No
PM 10	5.855	250	No
PM 2.5	0.037	250	No
Pb	0.000	25	No
NH3	0.012	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.004	250	No
NOx	0.108	250	No
CO	0.093	250	No
SOx	-0.001	250	No
PM 10	0.007	250	No
PM 2.5	0.007	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.004	250	No
NOx	0.108	250	No
CO	0.093	250	No
SOx	-0.001	250	No
PM 10	0.007	250	No
PM 2.5	0.007	250	No
Pb	0.000	25	No
NH3	0.000	250	No

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

Carolyn Hein, Contractor	Jun 11 2024
Name, Title	**Date**

Greenhouse Gas (GHG) Emissions

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to estimate GHG emissions and assess the theoretical Social Cost of Greenhouse Gases (SC GHG) associated with the action. The analysis was performed 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 USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions and SC GHG analysis.

Report generated with ACAM version: 5.0.23a

a. Action Location:
Base: MACDILL AFB
State: Florida
County(s): Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Installation Development at MacDill AFB, Florida

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2025

e. Action Description:

The Proposed Action includes implementation of nine installation development projects including three facility construction projects, five infrastructure construction and repair projects, and one demolition project. Each project was treated as a discrete proposed action; therefore, air emissions were modeled for each project separately.

The analysis assumes construction for each of the infrastructure and improvement projects would occur over a 1-year period. Implementation years used for each project are listed in Section 2, Table 2-1 of the EA. The implementation years listed in Section 2, Table 2-1 represent the federal government's fiscal year, which runs from October of one calendar year through September of the Next calendar year (e.g., fiscal year 2025 runs from October 2024 through September 2025). However, a 1-calendar year construction/renovation/demolition period was used in this analysis to equate a worse-case emissions scenario in which all activity for a single project occurs in the same calendar year. The actual construction/renovation/demolition period may be different than what was assumed for the analysis.

f. Point of Contact:
Name: Carolyn Hein
Title: Contractor
Organization: HDR
Email:
Phone Number:

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (NO2). These three GHGs represent more than 97 percent of all U.S. GHG emissions.

Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2025	658	0.0263505	0.00719607	661	68,039	No
2026	254	0.01045263	0.00277545	255	68,039	No
2027	197	0.00755667	0.00203751	198	68,039	No
2028	116	0.00431164	0.00121107	117	68,039	No
2029	435	0.013424	0.02334108	442	68,039	No
2030	126	0.00235626	0.00237995	126	68,039	No
2031 [SS Year]	126	0.00235626	0.00237995	126	68,039	No
2032	126	0.00235626	0.00237995	126	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2025	227,404,647	552,428	58,049	228,015,124
2026	227,404,647	552,428	58,049	228,015,124
2027	227,404,647	552,428	58,049	228,015,124
2028	227,404,647	552,428	58,049	228,015,124
2029	227,404,647	552,428	58,049	228,015,124
2030	227,404,647	552,428	58,049	228,015,124
2031 [SS Year]	227,404,647	552,428	58,049	228,015,124
2032	227,404,647	552,428	58,049	228,015,124

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798

U.S. Annual GHG Emissions (mton/yr)				
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2025-2032	State Total	1,819,237,176	4,419,422	464,391	1,824,120,989
2025-2032	U.S. Total	41,091,633,432	205,015,293	12,005,661	41,308,654,387
2025-2032	Action	2,039	0.069164	0.043701	2,051
Percent of State Totals		0.00011207%	0.00000157%	0.00000941%	0.00011244%
Percent of U.S. Totals		0.00000496%	0.00000003%	0.00000036%	0.00000497%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000067%.*

* Global value based on the U.S. emits 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

Climate Change Assessment (as SC GHG):

On a global scale, the potential climate change effects of an action are indirectly addressed and put into context through providing the theoretical SC GHG associated with an action. The SC GHG is an administrative and theoretical tool intended to provide additional context to a GHG's potential impacts through approximating the long-term monetary damage that may result from GHG emissions affect on

climate change. It is important to note that the SC GHG is a monetary quantification, in 2020 U.S. dollars, of the theoretical economic damages that could result from emitting GHGs into the atmosphere.

The SC GHG estimates are derived using the methodology and discount factors in the "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990," released by the Interagency Working Group on Social Cost of Greenhouse Gases (IWG SC GHGs) in February 2021.

The speciated IWG Annual SC GHG Emission associated with an action (or alternative) are first estimated as annual unit cost (cost per metric ton, $/mton). Results of the annual IWG Annual SC GHG Emission Assessments are tabulated in the IWG Annual SC GHG Cost per Metric Ton Table below:

IWG SC GHG Discount Factor: 3%

IWG Annual SC GHG Cost per Metric Ton ($/mton [In 2020 $])			
YEAR	**CO2**	**CH4**	**N2O**
2025	$56.00	$1,700.00	$21,000.00
2026	$57.00	$1,800.00	$21,000.00
2027	$59.00	$1,800.00	$21,000.00
2028	$60.00	$1,900.00	$22,000.00
2029	$61.00	$1,900.00	$22,000.00
2030	$62.00	$2,000.00	$23,000.00
2031 [SS Year]	$63.00	$2,000.00	$23,000.00
2032	$64.00	$2,100.00	$24,000.00

Action-related SC GHG were estimated by calendar-year for the projected action's lifecycle. Annual estimates were found by multiplying the annual emission for a given year by the corresponding IWG Annual SC GHG Emission value (see table above).

Action-Related Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO2**	**CH4**	**N2O**	**GHG**
2025	$36.87	$0.04	$0.15	$37.07
2026	$14.48	$0.02	$0.06	$14.55
2027	$11.61	$0.01	$0.04	$11.67
2028	$6.98	$0.01	$0.03	$7.02
2029	$26.55	$0.03	$0.51	$27.09
2030	$7.81	$0.00	$0.05	$7.87
2031 [SS Year]	$7.94	$0.00	$0.05	$8.00
2032	$8.06	$0.00	$0.06	$8.12

The following two tables summarize the U.S. and State's Annual SC GHG by calendar-year. The U.S. and State's Annual SC GHG are in 2020 dollars and were estimated by each year for the projected action lifecycle. Annual SC GHG estimates were found by multiplying the U.S. and State's annual five-year average GHG emissions for a given year by the corresponding IWG Annual SC GHG Cost per Metric Ton value.

State's Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO2**	**CH4**	**N2O**	**GHG**
2025	$12,734,660.23	$939,127.11	$1,219,026.16	$14,892,813.51
2026	$12,962,064.88	$994,369.88	$1,219,026.16	$15,175,460.93
2027	$13,416,874.18	$994,369.88	$1,219,026.16	$15,630,270.22
2028	$13,644,278.82	$1,049,612.66	$1,277,075.03	$15,970,966.51
2029	$13,871,683.47	$1,049,612.66	$1,277,075.03	$16,198,371.15
2030	$14,099,088.12	$1,104,855.43	$1,335,123.89	$16,539,067.44
2031 [SS Year]	$14,326,492.76	$1,104,855.43	$1,335,123.89	$16,766,472.08
2032	$14,553,897.41	$1,160,098.20	$1,393,172.76	$17,107,168.37

U.S. Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO2**	**CH4**	**N2O**	**GHG**
2025	$287,641,434.02	$43,565,749.86	$31,514,860.36	$362,722,044.24
2026	$292,777,888.20	$46,128,441.02	$31,514,860.36	$370,421,189.58
2027	$303,050,796.56	$46,128,441.02	$31,514,860.36	$380,694,097.94
2028	$308,187,250.74	$48,691,132.19	$33,015,567.99	$389,893,950.92
2029	$313,323,704.92	$48,691,132.19	$33,015,567.99	$395,030,405.10
2030	$318,460,159.10	$51,253,823.36	$34,516,275.63	$404,230,258.09
2031 [SS Year]	$323,596,613.28	$51,253,823.36	$34,516,275.63	$409,366,712.27
2032	$328,733,067.46	$53,816,514.53	$36,016,983.26	$418,566,565.25

Relative Comparison of SC GHG:

To provide additional real-world context to the potential climate change impact associate with an action, a Relative Comparison of SC GHG Assessment is also performed. While the SC GHG estimates capture an indirect approximation of global climate damages, the Relative Comparison of SC GHG Assessment provides a better perspective from a regional and global scale.

The Relative Comparison of SC GHG Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (yGba.e., global, national, and regional) and the SC GHG as the degree (intensity) of the proposed action's effects. The Relative Comparison Assessment provides real-world context and allows for a reasoned choice among alternatives through a relative contrast analysis which weighs each alternative's SC GHG proportionally against (or relative to) existing global, national, and regional SC GHG. The below table provides a relative comparison between an action's SC GHG vs. state and U.S. projected SC GHG for the same time period:

Total SC-GHG ($K [In 2020 $])					
		CO2	**CH4**	**N2O**	**GHG**
2025-2032	State Total	$109,609,039.87	$8,396,901.25	$10,274,649.09	$128,280,590.21
2025-2032	U.S. Total	$2,475,770,914.28	$389,529,057.54	$265,625,251.57	$3,130,925,223.39
2025-2032	Action	$120.30	$0.13	$0.96	$121.38
Percent of State Totals		0.00010975%	0.00000149%	0.00000933%	0.00009462%
Percent of U.S. Totals		0.00000486%	0.00000003%	0.00000036%	0.00000388%

From a global context, the action's total SC GHG percentage of total global SC GHG for the same time period is: 0.00000052%.*

* Global value based on the U.S. emits 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

Carolyn Hein, Contractor — Jun 11 2024

Name, Title — **Date**

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