

DRAFT FINDING OF NO SIGNIFICANT IMPACT

Environmental Assessment of Short-Term Construction at the 141st Air Control Squadron of the Puerto Rico Air National Guard Punta Borinquen Geographically Separated Unit, Aguadilla, Puerto Rico

1.0 INTRODUCTION

The National Guard Bureau (NGB) prepared an Environmental Assessment (EA) to consider the potential consequences to the human and natural environments associated with a Proposed Action at the 141st Air Control Squadron (141 ACS) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, PR. The 141 ACS is stationed in Punta Borinquen, a geographically separated unit (GSU) of the 156th Wing (156 WG). This EA also identifies applicable best management practices (BMPs) that would avoid or minimize effects resulting from implementing the Proposed Action or alternatives.

NGB has prepared this EA pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §§ 4321–4347), Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the Environmental Impact Analysis Process (EIAP) (32 CFR Part 989, formerly promulgated as Air Force Instruction 32-7061). The lead agency for this NEPA analysis is NGB.

As described in 32 CFR Part 989, the NEPA process is intended to provide the Air Force planners and decision-makers with a meaningful review of environmental considerations associated with a given action. The analysis set forth in this EA allows the decision-makers to carefully balance the protection of these environmental resources while fulfilling the Department of the Air Force (DAF)'s essential roles, including national defense, and PRANG's mission to provide adequate training facilities in support of the military mission. Both environmental staff and military personnel within the PRANG were consulted and provided guidance on the development of this EA.

Per amendments to 10 U.S.C. § 10501, described in Department of Defense (DoD) Directive 5105.77, NGB is a joint activity of DoD. NGB serves as a channel of communication and funding between the Air Force and State ANG organizations in the 54 U.S. states, territories, and the District of Columbia. The National Guard Bureau Air Directorate (NGB-CF) oversees the NEPA process for ANG facilities, as required under NEPA, CEQ Regulations, and 32 CFR Part 989.

This EA also will serve to satisfy the requirements of the PR Environmental Public Policy Act (Act No. 416 of September 22, 2004, as amended); PR's Environmental Assessment Process (Regulation No. 8858 of November 28, 2016); and the Joint Regulation for Evaluation and Issuance of Permits Related to Development, Land Use, and Business Operations (Regulation No. 9233 of December 2, 2020; also known as "the 2020 Regulation").

The purpose of the Proposed Action is to provide the 141 ACS with the facilities, infrastructure, and level of readiness required to accomplish its mission. All proposed projects would meet the purpose of and need for the Proposed Action. The period required to implement the projects would be approximately 5 years.

The determination of environmental resource areas to be analyzed versus those not carried forward for detailed analysis was part of the EA 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 EA. The Proposed Action and alternatives would have no or negligible potential for any effects (including effects from unrelated but foreseeable future actions) on the following environmental resource areas: aesthetics and visual resources, airspace, geological resources, land use, noise, socioeconomics (including environmental justice and protection of children), and utilities. Therefore, these resource areas were not carried forward for detailed analysis in the EA.

A preliminary analysis of environmental effects determined that the Proposed Action could have greater than negligible effects on the following resource areas: air quality, biological resources, cultural resources, hazardous materials and wastes, health and safety, transportation, and water resources. Therefore, these resource areas were carried forward for detailed analysis in the EA.

2.0 PROPOSED ACTION

Under the Proposed Action, the 141 ACS would implement construction, demolition, repair, and renovation projects listed in Table 1. The Proposed Action is the 141 ACS's Preferred Alternative. Operations at Punta Borinquen GSU would not appreciably change, and no new permanent jobs would be created from implementing the Proposed Action.

Table 1. Proposed Projects

Project Title (Project Number, NGB Project Number)	
Remove Underground Storage Tanks (USTs) (Project No. 1, TKWR ¹ 212302)	
Project Type	Demolition
Fiscal Year	2022
Project Need	Nationwide, NGB is replacing USTs with aboveground fuel tanks.
Proposed Action (Preferred Alternative)	Remove the concrete pad covering two USTs (a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank) northeast of Building 11. Remove both USTs and the serving pump. The concrete pad covers approximately 1,950 square feet (SF). Remove or cap all utilities serving the site. The contractor would empty the tanks if they contain any fuel.
Alternatives	None.

¹ PRANG project number (TKWR followed by 6-digit number)

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Project Title (Project Number, NGB Project Number)	
No Action Alternative	PRANG would not remove the fuel tanks or the concrete pad. The 141 ACS could incur fines for noncompliance with proper operation and maintenance requirements of the UST system.
Construct a Weapon System Facility (Project No. 2, TKWR182304)	
Project Type	Construction
Fiscal Year	2023
Project Need	A Weapon System Facility is required to support a transition from a legacy weapon system to a modern weapon system, replacing AN/TYQ-23 (V) 5 Tactical Air Operations Modules (TAOM) with the AN/TYQ-23A (V) 1. The new weapon system would support the 141 ACS and it is required so that military personnel can train to support their federal mission. The change in the system is the upgrade of the TAOM computer system and servers and operation will be similar to the current system.
Proposed Action (Preferred Alternative)	Construct a 2,100-SF facility behind Building 33 (Alternative Site 2). The facility would be compatible with applicable DoD, DAF, and base design standards and comply with DoD antiterrorism/force protection (AT/FP) requirements. Facility construction would include installing environmental control unit connections and access, heating and cooling systems, lighting, and fire detection and alarm systems.
Alternatives	Two alternative sites for the facility were considered: <ul style="list-style-type: none"> Alternative Site 1, southeast of Building 1 Alternative Site 3, south of Building 1; would require demolition of the 2,150-SF Building 32 Regardless of the site, the same facility would be constructed with minor modifications to accommodate site constraints.
No Action Alternative	NGB would not construct a Weapon System Facility. The readiness and compliance of the 141 ACS would be compromised by not having a facility suitable for housing the new weapon system. Military personnel would not receive the training they need to support their federal mission.
Upgrade the Main Gate (Project No. 3, TKWR222302)	
Project Type	Repair/Renovation
Fiscal Year	2023
Project Need	The existing gate does not comply with DoD AT/FP requirements.
Proposed Action (Preferred Alternative)	Reconstruct the gate facility to comply with AT/FP requirements.
Alternatives	None.
No Action Alternative	PRANG would not repair or renovate the main gate. The installation would not have robust security measures in place to safeguard real property and personnel and would not comply with DoD AT/FP requirements.
Renovate the Main Building (Building 1) (Project No. 4, TKWR222301)	
Project Type	Renovation
Fiscal Year	2023
Project Need	Repairs and renovation are needed to protect personnel using the facility from possible contamination from materials in the structures and for cosmetic reasons.

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Project Title (Project Number, NGB Project Number)	
Proposed Action (Preferred Alternative)	Renovate Building 1 by replacing ceiling tiles, doors, floors, and walls, repainting, and making other cosmetic repairs. The current use of the building and its footprint would not change. The southernmost portion of the approximately 39,000-SF building was completely remodeled in 1978 and could contain lead-based paint (LBP); the contractor would test for and abate any LBP found in the facility.
Alternatives	None.
No Action Alternative	The 141 ACS would not renovate Building 1. The facility has deteriorated over time and would continue to deteriorate further, potentially affecting the health and well-being of personnel. Over time, the cost of renovating the building would increase.
Repair and Reseal Parking Lots and Roads (Project No. 5, TKWR222303)	
Project Type	Infrastructure Repair
Fiscal Year	2022
Project Need	Select roads and parking lots on the Punta Borinquen GSU are in poor condition because of heavy equipment traffic. Repairs are needed to ensure the longevity of the surfaces and reduce the risk of vehicle damage and personnel injuries.
Proposed Action (Preferred Alternative)	Repair and reseal roads and parking areas on the Punta Borinquen GSU. A total of approximately 3,200 SF of surface would be repaired or resealed.
Alternatives	None.
No Action Alternative	The 141 ACS would not repair or reseal parking lots and roads. Their condition would continue to deteriorate, risking vehicle damage and personnel injury and increasing the cost of repairing the surfaces.
Remove the Radar Dome and Reroof Building 7 (Project No. 6, TKWR232301)	
Project Type	Renovation
Fiscal Year	2024
Project Need	Radar and accessory equipment are no longer installed in Building 7; therefore, the dome is no longer needed. The dome is to be removed and disposed of. Building 7 is currently used for gym and office space.
Proposed Action (Preferred Alternative)	Disassemble and remove the radar dome using high-reach heavy equipment. Dispose of the dome following NGB guidance. Construct a new roof on the building.
Alternatives	None.
No Action Alternative	The 141 ACS would not remove the radar dome or replace the roof. The dome would require recurring maintenance.

3.0 ALTERNATIVES

The EA evaluates three sites for constructing a Weapon System Facility (Project No. 2):

- Preferred Alternative (Alternative Site 2): Northwest of Building 33.
- Alternative Site 1: Southeast of Building 1.
- Alternative Site 3: South of Building 1, which would require demolition of Building 32.

No alternatives were identified for any of the other projects.

3.1 No Action Alternative

The CEQ regulation in 40 CFR § 1502.14(c) requires analysis of the No Action Alternative in all NEPA documents. Under the No Action Alternative, the 141 ACS would not implement the Proposed Action. The 141 ACS would not implement the short-term construction, demolition, renovation, or repair projects. Although the No Action Alternative does not meet the base's needs or fulfill the purpose of and need for the Proposed Action, it is carried forward for detailed analysis in the EA as required under NEPA.

4.0 ENVIRONMENTAL EFFECTS

4.1 Air Quality

Short-term less-than-significant adverse effects on air quality would be expected from implementing the Preferred Alternative. Diminished operational emissions from USTs removal would result in long-term beneficial effects. Vehicle emissions and fugitive dust attributable to the Preferred Alternative would not contribute to a violation of any federal, commonwealth, or local air regulation. No new major or minor stationary source of air emissions would be established. Because of Building 32 demolition, emissions of air pollutants from construction of the Weapon System Facility (Project No. 2) at Alternative Site 3 would be greater than under the Preferred Alternative or Weapon System Facility Alternative Site 1; however, effects on air quality would still be short-term and less-than-significant.

No effects on air quality would result from implementing the No Action Alternative. Emissions at Punta Borinquen GSU would not change from their current levels.

4.2 Biological Resources

Implementing the Preferred Alternative would have short-term less-than-significant adverse effects and no long-term effects on biological resources. Short-term effects would be caused by displacement of local common wildlife species during construction activities. Construction activities would have less-than-significant adverse effects on biological resources. Two projects (Remove the Radar Dome/Reroof Building 7 and Renovate the Main Building [Building 1]) would involve demolition or repair of an existing building. If these projects are executed between April and October, when bats are likely to be roosting, the structures would be inspected before commencing construction to avoid disturbing any roosting bats. Operations and maintenance

activities would have no effects on biological resources. The nature and overall level of operations at the base would be similar to the existing conditions. Construction of the Weapons System Facility (Project No. 2) at Alternative Sites 1 or 3 would have similar effects as those under the Preferred Alternative. Alternative Site 3 would require demolition of Building 32 and, if the project is executed between April and October when bats are likely to be roosting, the structure would be inspected before commencing demolition to avoid disturbing any roosting bats.

No effects on biological resources would be expected from the implementing the No Action Alternative.

4.3 Cultural Resources

Implementing the Preferred Alternative would have no effects on historic properties. There are no historic properties present at Punta Borinquen GSU, and the Preferred Alternative would not adversely affect the sites and historic resources within a 1-mile radius; therefore, NGB determined that no historic properties would be affected. NGB consulted with the PR State Historic Preservation Officer (SHPO) via letter dated November 12, 2021. In a letter dated December 22, 2021, PR SHPO concurred with the finding of no historic properties affected. Effects from implementing Weapon System Facility Alternative Sites 1 or 3 would be similar to the Preferred Alternative.

No effects on historic properties would be expected from the implementing the No Action Alternative.

4.4 Hazardous Materials and Wastes, Solid Waste, and Other Contaminants

The Preferred Alternative would have short- and long-term less-than-significant adverse effects associated with hazardous materials and wastes, solid waste, and other contaminants; and short- and long-term less-than-significant adverse effects from hazardous materials use and hazardous waste generation. Short-term effects would be caused by the removal of the two USTs (a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank) northeast of Building 11. Long-term effects would be the result of hazardous materials use and hazardous waste generation during mission support activities. The proposed activities would not require subsurface soil excavation to depths that could affect groundwater. The part of Building 1 remodeled in 1978 could contain LBP; therefore, prior to commencing renovation activities, the contractor would test for and abate if LBP is found in the building. All construction, demolition, and operation activities would be conducted in accordance with applicable federal, commonwealth, or local laws and regulations or with permits and, therefore, would result in less-than-significant effects.

Project No. 1, TKWR212302, Remove USTs, and Project No. 2, TKWR182304, Construct a Weapon System Facility (Alternative Site 2) are located on Environmental Restoration Sites that were recommended for no further action.

Effects from implementing the Weapon System Facility Alternative Sites 1 or 3 would be similar to the Preferred Alternative. Alternative Site 3 would require demolition of Building 32. Because

this building is a recreation center constructed in 1993, asbestos-containing material (ACM), LBP, and Polychlorinated Biphenyls (PCBs) are not present in the building.

The activities conducted at Punta Borinquen GSU do not require aqueous film-forming foam to be stored, used for training activities, or used for fire suppression. Therefore, the GSU is not suspected to have releases of per- and polyfluoroalkyl substances (PFAS).

Long-term adverse effects would be expected from the implementation of the No Action Alternative. The 141 ACS could incur fines for non-compliance of proper operation and maintenance of the UST System.

4.5 Health and Safety

Under the Preferred Alternative, there would be short-term less-than-significant adverse effects and long-term beneficial effects on health and safety. Short-term effects include potential worker injury during construction, renovation, or demolition activities. All construction, demolition (and removal), and infrastructure renovation activities would be accomplished in accordance with applicable federal, commonwealth, and local health and safety regulations. Long-term beneficial effects would result from eliminating potential health and safety hazards after removing the Radar Dome and old building components; removing the USTs; repaving the internal roads and parking lot; and renovating the base entrance.

Effects from implementing the Weapons System Facility (Project No. 2) Alternative Sites 1 or 3 would be similar to the Preferred Alternative.

Long-term adverse effects would be expected from the implementation of the No Action Alternative. Without the required upgrades to the main gate, the GSU would not have robust security measures in place to safeguard personnel and real property. Current and future mission requirements and national security objectives would remain unmet.

4.6 Transportation

The Preferred Alternative would have short-term less-than-significant adverse and long-term beneficial effects on transportation resources. Short-term effects would be caused by roadway work, worker commutes, and delivery of equipment and materials during construction, demolition, and renovation/repair activities. The Preferred Alternative would not create permanent road closures or widespread traffic congestion and it would have no appreciable effect on transportation.

Effects from implementing the Weapons System Facility (Project No. 2) Alternative Sites 1 or 3 would be similar to the Preferred Alternative.

Adverse effects on transportation and circulation would be expected from the implementation of the No Action Alternative because the parking lots and roads would deteriorate further, and the main gate would remain non-compliant with DoD AT/FP requirements.

4.7 Water Resources

The Preferred Alternative would have short-term less-than-significant adverse and long-term beneficial effect on water resources. Effects would be caused by temporary site-specific changes during construction and renovation activities. No effects on water resources would be expected from operations at Punta Borinquen GSU after implementing the Preferred Alternative. Construction of the Weapon System Facility at Alternative Site 2 would not increase impervious surface as it is already covered in concrete. Overall, removal of the USTs would result in approximately 1,950 SF less impervious area, resulting in long-term beneficial effects from the slight decrease in stormwater generation.

Construction of the Weapon System Facility at Alternative Site 1 would add 2,100 SF of impervious area; however, removal of the USTs would decrease impervious area by 1,950 SF, resulting in a net increase of approximately 150 SF of impervious area. Therefore, there would be a slight increase in stormwater generation. Construction of the Weapon System Facility at Alternative Site 3 would demolish the 2,150-SF Building 32, resulting in net decrease of 2,000 SF impervious area and long-term beneficial effects from the slight decrease in stormwater generation.

All construction projects would be checked for consistency with Puerto Rico Coastal Zone Management regulations and policies. If required, PRANG would obtain a notice of Coastal Zone Management Act consistency or a waiver of such notice from the Puerto Rico Planning Board for the proposed projects at Punta Borinquen GSU.

No effects on water resources would result from implementing the No Action Alternative, as existing conditions would remain unchanged.

5.0 PUBLIC NOTICE

NEPA, 40 CFR Parts 1500–1508, and 32 CFR Part 989 require public review of the EA before approval of the Finding of No Significant Impact (FONSI) and implementation of the Proposed Action. The Draft EA and Draft FONSI are available for public review and comment for 30 days, beginning with publication of the Notice of Availability in the *El Nuevo Día* on June 6, 2022, with the comment period ending on July 6, 2022. The Draft EA and Draft FONSI are available for public review at the Office of Urbanism and Land Use, Municipality of Aguadilla, #11 San Carlos Avenue, City Hall, 3rd Floor, Plaza de Recreo Aguadilla, P.R. 00605, and in electronic form at <https://www.156wg.ang.af.mil>. Written comments should be sent to National Guard Bureau, Christine Yott, NEPA Program Manager, ATTN: Punta Borinquen EA, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject titled as ATTN: Punta Borinquen EA.

6.0 FINDING OF NO SIGNIFICANT IMPACT

After careful review of the potential effects of this Proposed Action, I have concluded that the Proposed Action, described and analyzed as the Preferred Alternative in the EA, would not have a significant impact on the quality of the human or natural environment or generate significant controversy. Accordingly, the requirements of the NEPA, CEQ regulations, and 32 CFR Part 989, *et seq.*, have been fulfilled, and an Environmental Impact Statement is not necessary and will not be prepared.

MARC V. Hewett, P.E., GS-15, DAF
Chief, Asset Management Division

Date

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**ENVIRONMENTAL ASSESSMENT
OF SHORT-TERM CONSTRUCTION**

**AT THE 141ST AIR CONTROL SQUADRON OF THE PUERTO RICO AIR
NATIONAL GUARD**

**PUNTA BORINQUEN GEOGRAPHICALLY SEPARATED UNIT
AGUADILLA, PUERTO RICO**

DRAFT



Prepared for

141st Air Control Squadron, Aguadilla, PR

Prepared by

U.S. Army Corps of Engineers, Mobile District

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Disclosure Statement

The National Guard Bureau (NGB) is providing this Draft Environmental Assessment (EA) for public comment in accordance with the National Environmental Policy Act of 1969 (NEPA), the President's Council on Environmental Quality NEPA regulations (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508), and the Department of the Air Force Environmental Impact Analysis Process (EIAP) (32 CFR Part 989). The EIAP requires that an opportunity be provided for public input on decision-making, the public be invited to offer inputs on alternative ways for NGB to accomplish its Proposed Action, and comments be solicited on NGB's analysis of environmental effects. Public commenting enables NGB to make better informed decisions. Submitted letters and other written and oral comments could be published in the EA. As required by law, NGB will address comments received on the EA and make them available to the public. Providing personal information with comments is voluntary. NGB will use any personal information provided only to identify the commenter's desire to make a statement during the public comment portion of any public meeting or hearing or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list of those requesting copies of the EA. Only the names of the individuals making comments, however, and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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ACRONYMS AND ABBREVIATIONS

§	Section
°F	Degrees Fahrenheit
141 ACS	141st Air Control Squadron
156 WG	156th Wing
ACAM	Air Conformity Applicability Model
ACM	Asbestos-Containing Material
AFI	Air Force Instruction
APE	Area of Potential Effect
AQCR	Air Quality Control Region
AST	Aboveground Storage Tank
AT/FP	Antiterrorism/Force Protection
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
DAF	Department of the Air Force
DoD	Department of Defense
DoDI	Department of Defense Instruction
DLA-DS	Defense Logistics Agency Disposition Services
DNER	Department of Natural and Environmental Resources
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gas
GIS	Geographic Information System

GSU	Geographically Separated Unit
HWMP	Hazardous Waste Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IPCC	Intergovernmental Panel on Climate Change
LBP	Lead-Based Paint
mmt	million metric tons
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NGB	National Guard Bureau
NHPA	National Historic Preservation Act of 1966
NO ₂	Nitrogen Dioxide
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenyl
PFAS	Per- and Polyfluoroalkyl Substances
PM	Particulate Matter
PM _{2.5}	Particulate Matter Less Than 2.5 Microns in Diameter
PM ₁₀	Particulate Matter Less Than 10 Microns in Diameter
ppb	parts per billion
ppm	parts per million
PR	Puerto Rico
PR-	Puerto Rico Route
PRANG	Puerto Rico Air National Guard
PRCZMP	PR Coastal Zone Management Program
PRPA	Puerto Rico Ports Authority
PRPB	Puerto Rico Planning Board
RCRA	Resource Conservation and Recovery Act
SF	Square Foot, Square Feet
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Officer
SICs	Standard Industrial Classifications
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide

SWPPP	Storm Water Pollution Prevention Plan
TAOM	Tactical Air Operations Modules
tpy	tons per year
TSCA	Toxic Substances Control Act
UFC	Unified Facilities Criteria
U.S.C.	United States Code
U.S.	United States (adjective only)
USEPA	U.S. Environmental Protection Agency
UPR	University of Puerto Rico
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WOTUS	Waters of the United States

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1.0 INTRODUCTION

The National Guard Bureau (NGB) prepared this Environmental Assessment (EA) to consider the potential consequences to the human and natural environments associated with a Proposed Action at the 141st Air Control Squadron (141 ACS) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, Puerto Rico. This EA also identifies applicable best management practices (BMPs) that would avoid or minimize effects resulting from implementing the Proposed Action or alternatives.

NGB prepared this EA pursuant to the National Environmental Policy Act of 1969 (NEPA) (Title 42 *United States Code* [U.S.C.] §§ 4321–4347), Council on Environmental Quality (CEQ) Final Rule dated 16 July 2020, *Update to the Regulations for Implementing the Procedural Provisions of National Environmental Policy Act* (Title 40 *Code of Federal Regulations* [CFR] Parts 1500–1508), and the Department of the Air Force (DAF) Environmental Impact Analysis Process (EIAP) (32 CFR Part 989). CEQ Final Rule dated 20 April 2022, *National Environmental Policy Act Implementing Regulations Revisions*, amends certain provisions of the regulations that were modified in 2020. Revisions to the 2020 CEQ regulations update went into effect on May 20, 2022. NGB is the lead agency for this NEPA analysis.

As described in 32 CFR Part 989, the NEPA process is intended to provide the DAF planners and decision-makers with a meaningful review of environmental considerations associated with a given action. The analysis set forth in this EA allows the decision-makers to carefully balance the protection of these environmental resources while fulfilling the DAF's essential roles, including national defense, and PRANG's mission to provide adequate training facilities in support of the military mission. Both environmental staff and military personnel within the PRANG were consulted with and provided guidance on the development of this EA.

Per amendments to 10 U.S.C. § 10501, described in Department of Defense (DoD) Directive 5105.77, the NGB is a joint activity of the DoD. NGB serves as a channel of communication and funding between the DAF and state ANG organizations in the 54 U.S. states, territories, and the District of Columbia. The National Guard Bureau Air Directorate (NGB-CF) oversees the NEPA process for Air National Guard facilities, as required under NEPA, CEQ Regulations, and 32 CFR Part 989.

This EA also will serve to satisfy the requirements of the PR Environmental Public Policy Act (Act No. 416 of September 22, 2004, as amended); PR's Environmental Assessment Process (Regulation No. 8858 of November 28, 2016); and the Joint Regulation for Evaluation and Issuance of Permits Related to Development, Land Use, and Business Operations (Regulation No. 9233 of December 2, 2020; also known as "the 2020 Regulation").

The Proposed Action is to implement various short-term construction, demolition, renovation, and repair projects for the 141 ACS in Aguadilla, PR. This EA provides a full analysis of the environmental effects that could result from the proposed projects.

Based on the analysis in this EA, the NGB will determine whether to issue a Finding of No Significant Impact (FONSI) and then proceed with the Proposed Action; issue a Notice of Intent (NOI) to prepare an environmental impact statement (EIS); or abandon the Proposed Action. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed projects, and the document must be made available to inform decision makers of the potential environmental effects of selecting the Proposed Action or a reasonable alternative (including the No Action Alternative).

1.1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to provide the 141 ACS with the facilities, infrastructure, and level of readiness required to accomplish its mission. All proposed projects would meet the purpose of and need for the Proposed Action. The period required to implement the projects would be approximately 5 years.

1.2 INSTALLATION LOCATION AND DESCRIPTION

The Punta Borinquen geographically separated unit (GSU) of the 156th Wing (156 WG) is home to the 141 ACS. It comprises approximately 6.5 acres and is located on the west side of Puerto Rico Route (PR-) 107, west of Rafael Hernández Airport (formerly Ramey Air Force Base), in the Municipality of Aguadilla, Puerto Rico (Figures 1-1 and 1-2). The DAF is leasing the 141 ACS land to PRANG for an indefinite term.

The mission of the 141 ACS is to provide personnel and equipment to meet the needs of the DAF Air Combat Command. The unit also provides counterair operations support, early warning surveillance, and data link and gap filler; and supports contingency operations and drug interdiction within the Caribbean region.

1.3 SUMMARY OF KEY ENVIRONMENTAL ASSESSMENT REQUIREMENTS

1.3.1 National Environmental Policy Act Requirements

NEPA requires federal agencies to consider the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued the *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500–1508) and updated them in 2020. The activities this document

addresses constitute a federal action; therefore, they must be assessed in accordance with NEPA. The DAF's implementing regulations for NEPA, the EIAP, are detailed in 32 CFR Part 989.

1.3.2 Antiterrorism/Force Protection Standards

The DoD has developed antiterrorism/force protection (AT/FP) standards designed to reduce the likelihood of physical damage to property, physical injury to personnel, and mass casualties from potential terrorist attacks. Antiterrorism standards are based on Department of Defense Instruction (DoDI) 2000.16 (2006), *DoD Antiterrorism (AT) Standards*; DAF Instruction (AFI) 10-245 (2017), *Antiterrorism (AT)*; and AFI 31-118 (2017), *Security*. These documents provide guidance and procedures to reduce the vulnerability of the installation and personnel to terrorism or terrorist activities. Unified Facilities Criteria (UFC) 4-010-01, *DoD Minimum Anti-Terrorism Standards for Buildings* (DoD, 2020), outlines various planning, construction, and operational standards that address potential terrorist threats.

1.3.3 Air Quality

The Clean Air Act (CAA) (42 U.S.C. §§ 7401–7671q) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards and regulate emission of toxic air pollutants to protect public health and welfare. USEPA developed federal standards, known as the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM), and lead (Pb). The CAA also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality to achieve attainment with the NAAQS. Under the CAA Amendments of 1990, federal agencies are required to determine whether their undertakings conform with the applicable SIP. In addition, they must demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. USEPA's General Conformity rule (40 CFR Part 93) requires a proponent in a maintenance or nonattainment area to determine if its Proposed Action would conform to the SIP. Under the General Conformity rule, the action is exempt if the total direct and indirect emissions from the Proposed Action are below the de minimis levels.



Figure 1-1. Punta Borinquen GSU Location Map

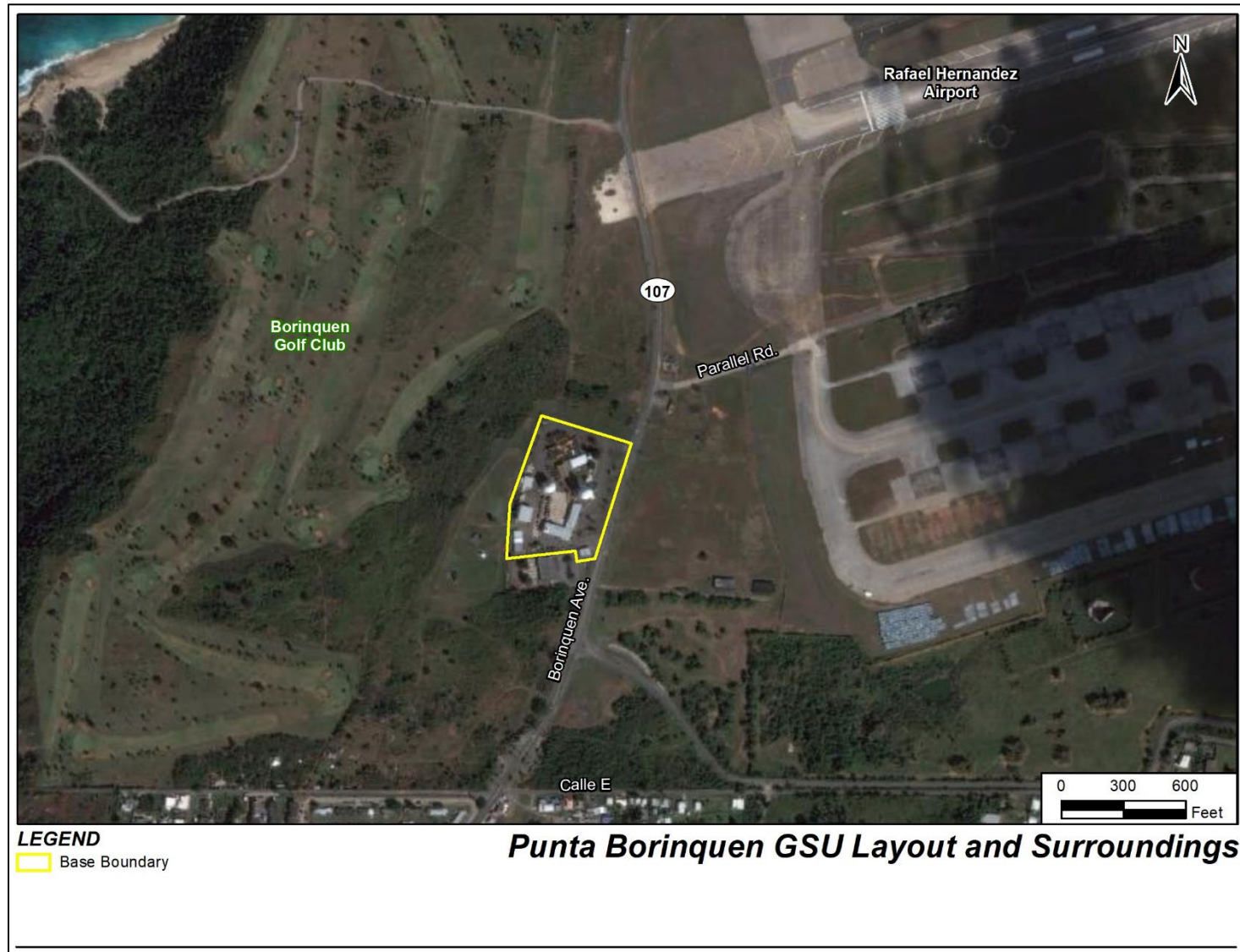


Figure 1-2. Punta Borinquen GSU Layout and Surroundings

1.3.4 Cultural Resources

The National Historic Preservation Act of 1966 (NHPA) (54 U.S.C. § 300101 *et seq.*) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation, outlining procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and Traditional Cultural Properties such as ancestral settlements, historic trails, and places where significant historic events occurred. NHPA requires federal agencies to consider potential effects on cultural resources that are listed, nominated, or eligible for listing in the NRHP; designated as a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. NHPA Section 106 requires federal agencies to consult with the State Historic Preservation Officer (SHPO) if their undertakings might affect those resources. Regulations detailed in 36 CFR Part 800, *Protection of Historic and Cultural Properties*, provide an explicit set of procedures that ensure federal agencies meet their obligations under the NHPA, which include inventorying resources and consulting with the SHPO.

The Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa–mm) was enacted to protect archaeological resources and sites on public and Native American lands; in addition to encouraging cooperation and exchange of information between governmental authorities, professionals, and private individuals. The act establishes civil and criminal penalties for destroying and altering cultural resources. AFI 90-2002, *Interactions with Federally Recognized Tribes*, implements the DAF program in accordance with DoDI 4710.02, *DoD Interactions with Federally Recognized Tribes*, and contains requirements that must be implemented as part of analyzing proposed actions.

1.3.5 Endangered Species

The Endangered Species Act (ESA) (16 U.S.C. §§ 1531–1544) establishes measures for the protection of plant and animal species federally listed as threatened or endangered, and for the conservation of habitats critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions in accordance with a set of defined procedures, which can include preparing a Biological Assessment and formal consultation with the U.S. Fish and Wildlife Service (USFWS) under ESA Section 7.

1.3.6 Hazardous Materials and Waste

Hazardous materials are defined by regulations in 49 CFR § 171.8, and transportation of hazardous materials is regulated by the U.S. Department of Transportation as detailed in 49 CFR Parts 105–180. Hazardous wastes are defined under the Resource Conservation and Recovery Act (42 U.S.C. § 6903(5)), as amended by the Hazardous and Solid Waste Amendments (40 CFR Parts 260–273). Special hazards are substances that could pose a risk to human health (e.g.,

asbestos-containing materials [ACMs], lead-based paint [LBP], and polychlorinated biphenyls (PCBs)) and are addressed separately from other hazardous substances under the Toxic Substances Control Act (TSCA) (15 U.S.C. § 2602 *et seq.*). Information on the location, quantity, and condition of hazardous materials and waste assists in determining the significance of a proposed action.

1.3.7 Water Resources

The Federal Water Pollution Control Act (also known as the Clean Water Act [CWA]) (33 U.S.C. § 1251 *et seq.*) was enacted to restore and maintain the chemical, physical, and biological integrity of waters (lakes, rivers, streams, wetlands, estuaries, and coastal zones) throughout the nation. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States (WOTUS) and water quality standards for surface waters. Pertinent sections of the CWA include the following:

- Section 401 gives states and delegated tribes the authority to grant, deny, or waive water quality certification of proposed federally licensed or permitted activities that might result in a discharge into WOTUS.
- Section 402 requires that all construction sites on 1 or more acres of land, as well as municipal, industrial, and commercial facilities discharging wastewater or stormwater directly from a point source (a pipe, ditch, or channel) into a surface WOTUS (a lake, river, and/or ocean) must obtain permission under a National Pollutant Discharge Elimination System (NPDES) permit.
- Section 404 regulates development activities in WOTUS, including wetlands. It requires a permit from the U.S. Army Corps of Engineers (USACE) for dredging or filling WOTUS.

The Rivers and Harbors Act prohibits the construction of any structures such as bridges, dams, dikes, causeways, wharfs, piers, and jetties, as well as excavation and/or filling within navigable waters without issuance of a Section 10 permit from USACE (33 U.S.C. § 403).

Section 438 of the Energy Independence and Security Act of 2007 (EISA) (42 U.S.C. § 17094) requires all federal agencies, including DoD, to reduce stormwater runoff from federal development projects with a footprint that exceeds 5,000 square feet (SF). These projects shall use site planning, design, construction, and maintenance strategies for the property; and maintain or restore the predevelopment hydrology of the property (i.e., temperature, rate, volume, and duration of flow) to the maximum extent technically feasible. Federal agencies are required to use the *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* to comply with the requirements of EISA Section 438 (USEPA, 2009). The Technical Guidance was prepared by USEPA as part of stormwater management design.

Executive Order (EO) 11988, *Floodplain Management*, requires federal agencies to avoid to the greatest extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development if there is a practicable alternative.

The Federal Emergency Management Agency regulates floodplains, which are recognized as special flood hazard areas (SFHAs) on the flood insurance rate maps. SFHAs are defined as areas that will be inundated by a flood event having a 1 percent chance of being equaled or exceeded in any given year (commonly referred to as the 100-year floodplain).

The Coastal Zone Management Act of 1972 (CZMA) was enacted to develop a national program to manage and balance competing uses of and impacts to coastal resources. Under the CZMA, activities requiring Federal permits must be consistent with a state's or Commonwealth's approved Coastal Management Program. Puerto Rico's Coastal Management Program was approved by National Oceanic and Atmospheric Administration (NOAA) in 1978 and is comprised of a network of agencies with authority in the coastal zone. The Department of Natural and Environmental Resources (DNER) serves as the lead agency and is responsible for managing the maritime zone, coastal waters, and submerged lands. The Puerto Rico Planning Board (PRPB) serves as the primary agency for managing coastal development. Other Commonwealth agencies that are part of the Coastal Program include Regulations and Permits Administration, Department of Recreation and Sports, National Park Company, Department of Agriculture, and Institute of Puerto Rican Culture. Puerto Rico's coastal zone generally extends 1,000 meters (1 kilometer) inland but extends further inland in places to include important coastal resources. A notice of CZMA consistency or a waiver of such notice is required for all Federal action within the coastal zone. In Puerto Rico, this notice or waiver is issued by the PRPB.

1.3.8 Other Environmental Assessment Requirements

1.3.8.1 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that, to the greatest extent practicable and permitted by law, each federal agency make achieving environmental justice part of its mission. Federal agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States.

1.3.8.2 Protection of Children

EO 13045, *Protection of Children from Environmental Health and Safety Risks*, recognizes children may suffer disproportionately from environmental health and safety risks. The EO prioritizes identifying and assessing environmental health and safety risks that might affect

children. It also promotes federal agency policies, programs, activities, and standards that address environmental risks and safety risks to children.

1.3.8.3 Invasive Species

EO 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, calls for actions to prevent the introduction of invasive species, provide for their control, and minimize the economic, plant, animal, ecological, and human health impacts that they cause using the following: the laws of the United States (including NEPA); the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 U.S.C. § 4701 *et seq.*); the Plant Protection Act (7 U.S.C. § 7701 *et seq.*); the Lacey Act, as amended (16 U.S.C. §§ 3371–3378 *et seq.*); ESA; and the Noxious Weed Control and Eradication Act of 2004 (7 U.S.C. § 7781 *et seq.*). EO 13751 amends and replaces the earlier EO 13112, *Invasive Species*.

1.3.8.4 Migratory Birds

EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, furthers the intent of the Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703–711) to ensure the conservation of migratory birds and their habitats. The EO further ensures environmental analysis of federal actions required by NEPA and other established environmental review processes to evaluate the effects of actions and agency plans on migratory birds, with an emphasis on species of concern.

1.3.8.5 Farmland Protection

The Farmland Protection Policy Act of 1981 (7 U.S.C. § 4201) requires federal agencies to identify adverse impacts on prime and unique farmlands within project action areas.

1.4 RESOURCES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

Determining which resource areas to analyze in detail in this EA and which to eliminate from further consideration is part of the EA scoping process. As described in 40 CFR § 1501.9(f)(1), resource areas addressed in prior environmental reviews or that are not significant may be eliminated from discussion in the EA. NGB found that the Proposed Action and alternatives would have no or negligible potential for any effects (including effects from unrelated but foreseeable future actions) on the following environmental resource areas: aesthetics and visual resources; airspace; geological resources; land use; noise; socioeconomics (including environmental justice and protection of children); and utilities. For the reasons presented in the following subsections, NGB eliminated the resource areas from detailed analysis in the EA.

1.4.1 Aesthetics and Visual Resources

The Proposed Action would have no appreciable effects on aesthetics or visual resources. No aesthetically sensitive locations exist within the viewshed of the proposed site. The existing view

is of a GSU with developed areas and interspersed maintained lawn areas with trees. While the projects are being implemented, the visual and aesthetic characteristics of project areas would be temporarily altered by construction, demolition, repair, and renovation activities. Following their completion, the aesthetics of Punta Borinquen GSU would be improved as a result of deteriorating structures having been removed or repaired. The principal visual features of the facility would remain largely unchanged. These effects would be negligible; therefore, aesthetics and visual resources were not carried forward for detailed analysis in this EA.

1.4.2 Airspace

The Proposed Action would have no effects on airspace. None of the planned projects would involve aircraft or airspace use. Therefore, Airspace is not carried forward for detailed analysis in this EA.

1.4.3 Geological Resources

The Proposed Action is not expected to result in any appreciable effects on geological resources. Ground-disturbing activities would be temporary and standard erosion control measures would be implemented in accordance with an NPDES permit for construction projects as part of the Proposed Action to minimize impacts (see Section 1.3.7). No proposed project would alter the topography of the Punta Borinquen GSU. None of the project sites are near identified geological hazards. The effects of these activities on geological resources would be negligible; therefore, geological resources were not carried forward for detailed analysis in this EA.

1.4.4 Land Use

The Proposed Action would not result in any effects on land use. Punta Borinquen GSU is bordered by a golf course on the north, west, and south; and by Borinquen Road on the east. Proposed projects would not change the current land use classification of the GSU, or the land uses of surrounding areas. The Proposed Action is consistent with PRANG planning policies and guidelines, and no land use incompatibilities would be created. Any land use effects would be negligible; therefore, land use was not carried forward for detailed analysis in this EA.

1.4.5 Noise

The Proposed Action would not result in any appreciable changes in the noise environment. Construction, demolition, renovation, and repair activities would require the use of heavy equipment that would generate short-term increases in noise near the project sites. All activities would occur within the base property boundary and far enough from sensitive noise receptors that no adverse effects on those receptors would be expected. No new permanent sources of noise would be associated with the Proposed Action. Therefore, no long-term changes in the noise

environment would be expected. Overall, the effects would be negligible; therefore, noise was not carried forward for detailed analysis in this EA.

1.4.6 Socioeconomics (including Environmental Justice and Protection of Children)

The Proposed Action would have no appreciable effects on the local or regional socioeconomic environment. It would have negligible, short-term beneficial effects from employment of construction personnel, and purchases of construction equipment, materials, and supplies. The Proposed Action would not result in long-term, permanent increases or decreases in employment or population, as the action does not include changes in the number of military or civilian GSU operations personnel. No permanent jobs would be created from implementing the Proposed Action projects. Therefore, socioeconomics was not carried forward for detailed analysis in this EA.

The Proposed Action would have no appreciable effects on environmental justice. The threshold used for identifying minority and low-income populations was developed consistent with CEQ guidance (CEQ, 1997) for identifying minority populations using either the 50 percent threshold or another percentage deemed “meaningfully greater” than the percentage of minority or low-income individuals in the general population. CEQ guidance does not provide a numerical definition of the term “meaningfully greater.” For this analysis, NGB established the significance thresholds for environmental justice concerns at the commonwealth level (i.e., Puerto Rico). The municipality was determined to contain a meaningfully higher percentage of minority or low-income populations if the percentage substantially exceeds (by 20 percentage points or more) the Puerto Rico average or exceeds 50 percent of the population. The populations of Puerto Rico and Aguadilla consist almost entirely of people of a minority race or ethnicity, with 99 percent and 98 percent of their populations, respectively, being people of Hispanic or Latino origin (U.S. Census Bureau, 2021). The percentage of residents with income below the 2019 poverty threshold was 52 percent for Aguadilla, higher than Puerto Rico’s 2019 threshold of 44 percent (U.S. Census Bureau, 2021). The Proposed Action would have no appreciable effects on the environmental justice populations. The Proposed Action to construct, demolish, renovate, and repair facilities at the Punta Borinquen GSU would result in no disproportionate adverse environmental or health effects on low-income or minority populations; therefore, environmental justice was not carried forward for detailed analysis in this EA.

The Proposed Action would have no appreciable effects on the health and safety of children. The Punta Borinquen GSU has no family housing or facilities where children typically are present (e.g., childcare centers and schools). It is a fenced facility with controlled entry and is not close to any residential areas or schools where children could easily get onto the base. Children would have no access to the on-base project sites. Therefore, protection of children was not carried forward for detailed analysis in this EA.

1.4.7 Utilities

The Proposed Action would have no appreciable effects on utilities in Aguadilla or Puerto Rico. Punta Borinquen GSU is connected to utilities and the utility infrastructure has sufficient capacity to accommodate the proposed projects; therefore, no utility upgrades would be needed to support the construction activities or new facilities. Overall, the effects would be negligible; therefore, utilities were not carried forward for detailed analysis in this EA.

1.5 PUBLIC AND AGENCY REVIEW OF ENVIRONMENTAL ASSESSMENT

NGB provides opportunities for the public to participate in the NEPA process to promote open communication and improve its decision-making process. All individuals and organizations with an interest in the Proposed Action and alternatives are encouraged to participate in the process.

EO 12372, *Intergovernmental Review of Federal Programs*, requires the project proponent to make intergovernmental notifications before making any detailed statement of environmental effects. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the project proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental effects of the Proposed Action. Through the IICEP process, NGB notified relevant federal, commonwealth, and local agencies and allowed them 30 days to make known their environmental concerns about the Proposed Action. Copies of all correspondence are provided in Appendix A.

NEPA and the EIAP require public review of the EA before approval of the FONSI and implementation of the Proposed Action. A Notice of Availability (NOA) of the Draft EA and Draft FONSI for public review was published in *El Nuevo Día* on June 6, 2022. The Draft EA and Draft FONSI was made available in electronic form for public review at <https://www.156wg.ang.af.mil/>. The Draft EA and Draft FONSI was made available for public review at the Office of Urbanism and Land Use, Municipality of Aguadilla, #11 San Carlos Avenue, City Hall, 3rd Floor, Plaza de Recreo Aguadilla, PR 00605. Comments on the Draft EA and Draft FONSI received during the review period and copies of all correspondence and agency letters received will be included in Appendix A. A copy of the NOA as it appeared in *El Nuevo Día* will be included in Appendix B.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes in detail the Proposed Action, which is to complete short-term construction, demolition, repair, and renovation projects at the Punta Borinquen GSU. The details of the Proposed Action form the basis of the analysis of potential environmental effects presented in Section 3.0 of this EA. This section also discusses considerations used to identify reasonable alternatives, including the No Action Alternative.

This EA analyzes implementation of the proposed projects at the Punta Borinquen GSU as well as any proposed alternatives to those projects over the next 5 years. If this EA results in a FONSI, the 141 ACS could implement any projects or project alternatives assessed in this EA.

2.1 PROPOSED ACTION

Under the Proposed Action, the 141 ACS would implement construction, demolition, renovation, and repair projects at the Punta Borinquen GSU, as described in Table 2-1 at the locations shown on Figure 2-1. Photographs of project locations taken during a June 2021 site visit are provided in Section 2.5. The Proposed Action is the 141 ACS's Preferred Alternative.

Operations at the Punta Borinquen GSU would not appreciably change, and no new permanent jobs would be created from implementing the Proposed Action. This section discusses the proposed projects, each of which is identified by a project number and also by its PRANG project number (TKWR followed by 6-digit number), and the fiscal year in which it is estimated to be completed.

2.1.1 Construction and Demolition Projects

There is one project that involves new construction, which would add approximately 2,100 SF of new building and impervious surface to the GSU, and one project that involves facility demolition. The construction project would be implemented on previously disturbed land. The demolition project involves removing underground storage tanks (USTs) and an associated fuel pump and concrete pad. Table 2-1 provides project details.

- ***Remove USTs (Project No. 1, TKWR212302) (Fiscal Year 2022 [FY22]).*** This project involves removing a concrete pad, a fuel pump, and two USTs.
- ***Construct a Weapon System Facility (Project No. 2, TKWR182304) (FY23).*** This project involves construction of an approximately 2,100-SF Weapon System Facility.

2.1.2 Renovation and Infrastructure Repair Projects

Four projects involve renovation or infrastructure repair. See Table 2-1 for project details.

- **Upgrade the Main Gate (Project No. 3, TKWR222302) (FY23).** This project involves reconstructing the gate facility to comply with DoD AT/FP requirements.
- **Renovate the Main Building (Building 1) (Project No. 4, TKWR222301) (FY23).** This project involves making safety and cosmetic renovations to Building 1.
- **Repair and Reseal Parking Lots and Roads (Project No. 5, TKWR222303) (FY22).** This project involves repairing approximately 3,200 SF of deteriorated pavement on the base.
- **Remove the Radar Dome and Reroof Building 7 (Project No. 6, TKWR232301) (FY24).** This project involves removing the Radar Dome on Building 7 and replacing it with a new roof.

Table 2-1. Summary of Proposed Projects

Project Title (Project No. #, NGB Project Number)	
Remove USTs (Project No. 1, TKWR212302)	
Project Type	Demolition
Fiscal Year	2022
Project Need	Nationwide, NGB is replacing USTs with aboveground fuel tanks.
Proposed Action (Preferred Alternative)	Remove the concrete pad covering two USTs (a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank) northeast of Building 11. Remove both USTs, the fuel pump and the approximately 1,950 SF concrete pad. Remove or cap all utilities serving the site. The contractor would empty the tanks if they contain any fuel.
Alternatives	None.
No Action Alternative	PRANG would not remove the two USTs, the fuel pump, and the concrete pad. The 141 ACS could incur fines for noncompliance with proper operation and maintenance requirements of the UST system.
Construct a Weapon System Facility (Project No. 2, TKWR182304)	
Project Type	Construction
Fiscal Year	2023
Project Need	A Weapon System Facility is required to support a transition from a legacy weapon system to a modern weapon system, replacing AN/TYQ-23 (V) 5 Tactical Air Operations Modules (TAOM) with the AN/TYQ-23A (V) 1. The new weapon system would support the 141 ACS and it is required so that military personnel can train to support their mission. The change in the system is the upgrade of the TAOM computer system and servers, and operation will be similar to the current system.
Proposed Action (Preferred Alternative)	Construct a 2,100-SF facility northwest of Building 33 (Alternative Site 2). The facility would be compatible with applicable DoD, DAF, and base design standards and comply with DoD AT/FP requirements. Facility construction would include installing environmental control unit connections and access, heating and cooling systems, lighting, and fire detection and alarm systems.

Project Title (Project No. #, NGB Project Number)	
Alternatives	Two alternative sites for the facility were considered: <ul style="list-style-type: none"> Alternative Site 1, southeast of Building 1 Alternative Site 3, south of Building 1; would require demolition of Building 32, which is a 2,150-SF recreational facility constructed in 1993 Regardless of the site, the same facility would be constructed with minor modifications to accommodate site constraints.
No Action Alternative	NGB would not construct a Weapon System Facility. The readiness and compliance of the 141 ACS would be compromised by not having a facility suitable for housing the new weapon system. Military personnel would not receive the training they need to support their federal mission.
Upgrade the Main Gate (Project No. 3, TKWR222302)	
Project Type	Repair/Renovation
Fiscal Year	2023
Project Need	The existing gate does not comply with DoD AT/FP requirements.
Proposed Action (Preferred Alternative)	Reconstruct the gate facility to comply with AT/FP requirements.
Alternatives	None.
No Action Alternative	PRANG would not repair or renovate the main gate. The base would not have robust security measures in place to safeguard real property and personnel and would not comply with DoD AT/FP requirements.
Renovate the Main Building (Building 1) (Project No. 4, TKWR222301)	
Project Type	Renovation
Fiscal Year	2023
Project Need	Repairs and renovation are needed to protect personnel using the facility from possible contamination from materials in the structures and for cosmetic reasons.
Proposed Action (Preferred Alternative)	Renovate Building 1 by replacing ceiling tiles, doors, floors, and walls; repainting; and making other cosmetic repairs. The current use of the building and its footprint would not change. A portion of the approximately 38,000-SF building was completely remodeled in 1978 and could contain LBP; the contractor would test for and abate any LBP found in the facility.
Alternatives	None.
No Action Alternative	The 141 ACS would not renovate Building 1. The facility has deteriorated over time and would continue to deteriorate further, potentially affecting the health and well-being of personnel. The part of the could contain LBP. Over time, the cost of renovating the building would increase.
Repair and Reseal Parking Lots and Roads (Project No. 5, TKWR222303)	
Project Type	Infrastructure Repair
Fiscal Year	2022
Project Need	Select roads and parking lots on the Punta Borinquen GSU are in poor condition because of heavy equipment traffic. Repairs are needed to ensure the longevity of the surfaces and reduce the risk of vehicle damage and personnel injuries.

Project Title (Project No. #, NGB Project Number)	
Proposed Action (Preferred Alternative)	Repair and reseal roads and parking areas on the Punta Borinquen GSU. A total of approximately 3,200 SF of surface would be repaired or resealed.
Alternatives	None.
No Action Alternative	The 141 ACS would not repair or reseal parking lots and roads. Their condition would continue to deteriorate, risking vehicle damage and personnel injury and increasing the cost of repairing the surfaces.
Remove the Radar Dome and Reroof Building 7 (Project No. 6, TKWR232301)	
Project Type	Renovation
Fiscal Year	2024
Project Need	Radar and accessory equipment are no longer installed in Building 7; therefore, the dome is no longer needed. The dome is to be removed and disposed. Building 7 is currently used for gym and office space.
Proposed Action (Preferred Alternative)	Disassemble and remove the Radar Dome using high-reach heavy equipment. Dispose of the dome following NGB guidance. Construct a new roof on the building.
Alternatives	None.
No Action Alternative	The 141 ACS would not remove the Radar Dome or replace the roof. The dome would require recurring maintenance.

2.2 ALTERNATIVES

The EA evaluates three sites for constructing a Weapon System Facility (Project No. 2) (Figure 2-1):

- Preferred Alternative (Alternative Site 2): Northwest of Building 33.
- Alternative Site 1: Southeast of Building 1.
- Alternative Site 3: South of Building 1 which would require demolition of Building 32.

No alternatives were identified for any of the other projects.

2.3 NO ACTION ALTERNATIVE

The CEQ regulation in 40 CFR § 1502.14(c) requires analysis of the No Action Alternative in all NEPA documents. Under the No Action Alternative, the 141 ACS would not implement the Proposed Action. The 141 ACS would not implement the short-term construction, demolition, renovation, or repair projects. Although the No Action Alternative does not meet the base's needs or fulfill the purpose of and need for the Proposed Action, it is carried forward for detailed analysis in the EA as required under NEPA.



Figure 2-1. Proposed Project Locations

2.4 MANAGEMENT ACTIONS SPECIAL PROCEDURES

This section summarizes special operating procedures associated with this EA. “Special operating procedures” are defined as measures that would be implemented to address minor potential environmental effects associated with implementing the Preferred Alternative. The measures would follow the GSU’s management plans for air quality, hazardous wastes, natural resources, solid waste, spill prevention, and stormwater pollution prevention. The following types of environmental protection measures (described in this EA) and standard BMPs would be applied: reducing fugitive dust emissions by implementing control measures; accounting for soil constraints with engineering and site development; conforming to all federal, state, and local requirements related to stormwater pollution prevention during construction activities; and safely removing any potentially hazardous materials prior to initiating demolition activities.

Environmental protection measures are actions used to minimize impacts that are not required by statutes or regulations or to fulfill permitting requirements but are taken during design and construction phases of a project to reduce impacts on the environment. BMPs are actions required by statutes or regulations or to fulfill permitting requirements that reduce the significance of potential impacts. None of the environmental protection measures are needed to bring an effect of the Proposed Action below the threshold of significance. Through analyses documented in this EA, NGB has determined that no significant environmental effects would result from implementing the Preferred Alternative. This determination is based on review and analysis of existing resource information, coordination with base personnel, and relevant agency coordination. Since implementing the Preferred Alternative would result in less-than-significant adverse effects on the resources evaluated, recommendations for special procedures are unnecessary.

2.5 PHOTOGRAPHS OF PROJECT LOCATIONS

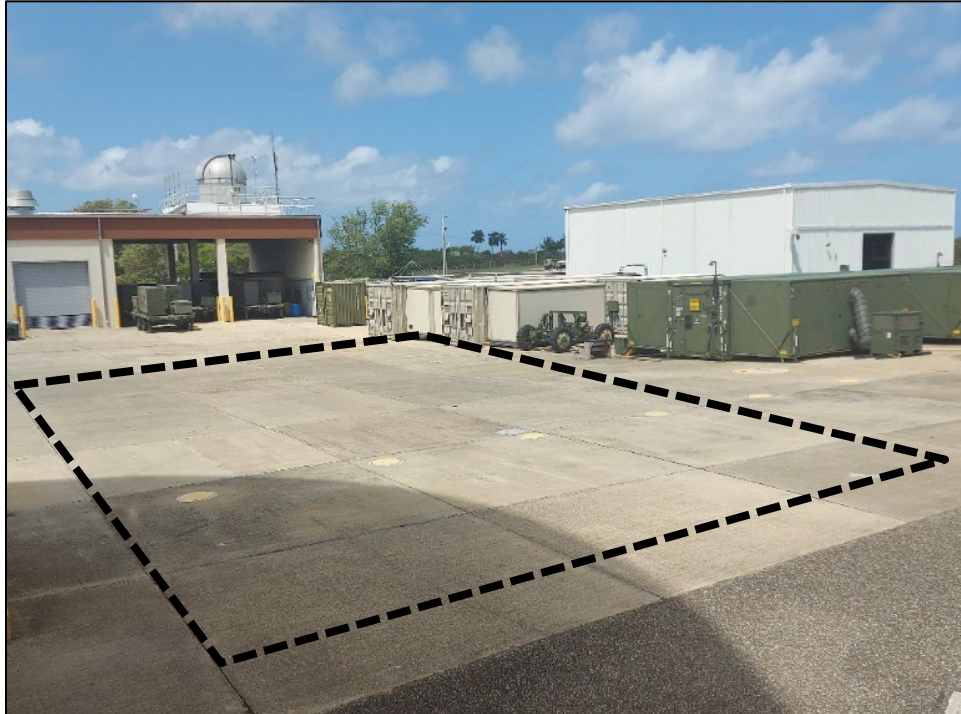
Photographs of project locations taken during the June 2021 site visit are provided in this section.



Project No. 1, TKWR212302, Remove USTs.



Project No. 2, TKWR182304, Construct a Weapon System Facility-Alternative Site 1.



***Project No. 2, TKWR182304, Construct a Weapon System Facility—Alternative Site 2
(Preferred).***



Project No. 2, TKWR182304, Construct a Weapon System Facility—Alternative Site 3.



Project No. 3, TKWR222302, Upgrade the Main Gate.



Project No. 4, TKWR222301, Renovate the Main Building (Building 1).



Project No. 5, TKWR222303, Repair and Reseal Parking Lots and Roads.



Project No. 6, TKWR232301, Remove the Radar Dome and Reroof Building 7.

2.6 SUMMARY OF ENVIRONMENTAL EFFECTS

Table 2-2 provides a comparison of environmental effects of the Proposed Action and alternatives and the No Action Alternative on the environmental resources evaluated. Implementation of the Proposed Action would result in short- and long-term, less-than-significant effects relative to the No Action Alternative.

Table 2-2. Summary of Environmental Effects

Resource Area	Proposed Action/Preferred Alternative	Weapon System Facility (Project No. 2) – Alternative Sites 1 or 3	No Action Alternative
Air Quality	Short-term less-than-significant adverse effects and beneficial long-term effects. Vehicle emissions and fugitive dust attributable to the Preferred Alternative would not contribute to a violation of any federal, commonwealth, or local air regulation. No new major or minor stationary source of air emissions would be established. USTs removal would diminish operational emissions.	Effects from implementing Alternative Site 1 would be similar to the Preferred Alternative. Because of Building 32 demolition, emissions of air pollutants from construction of the Weapon System Facility at Alternative Site 3 would be greater than under the Preferred Alternative or Weapon System Facility Alternative Site 1; however, effects on air quality would still be short-term less-than-significant.	No effects.
Biological Resources	Short-term less-than-significant adverse effects and no long-term effects. Short-term effects from displacement of local common wildlife species during construction activities. Two projects (Remove the Radar Dome /Reroof Building 7 and Renovate the Main Building (Building 1)) would involve demolition or repair of an existing building. If these projects are executed between April and October when bats are likely to be roosting, the structures will be inspected for roosting bats before the commencement of construction to avoid disturbing the bats. Operations and maintenance activities would have no effects on biological resources. The nature and overall level of operations at the base would be similar to the existing conditions.	Effects from implementing Alternative Sites 1 or 3 would be similar to the Preferred Alternative. Alternative Site 3 would require demolition of Building 32 and, if the project is executed between April and October when bats are likely to be roosting, the structure would be inspected before commencing demolition to avoid disturbing any roosting bats.	No effects.
Cultural Resources	No effects on cultural resources; no historic properties present. The PR State Historic Preservation Officer concurred with NGB's finding of no historic properties affected.	Effects from implementing Alternative Sites 1 or 3 would be same as the Preferred Alternative.	No effects.

Resource Area	Proposed Action/Preferred Alternative	Weapon System Facility (Project No. 2) – Alternative Sites 1 or 3	No Action Alternative
Hazardous Materials and Wastes, Solid Waste, and Other Contaminants	Short- and long-term less-than-significant adverse effects. Short-term effects result from removal of two USTs (northeast of Building 11). Long-term effects would be the result of using hazardous materials and hazardous waste generation during mission support activities. All construction, demolition, and operation activities would be conducted in accordance with applicable federal, commonwealth, or local laws and regulations or with permits; and therefore, would not result in significant effects.	Effects from implementing Alternative Sites 1 or 3 would be similar to the Preferred Alternative. Construction of Weapon System Facility at Alternative Site 3 would demolish 2,150 SF of Building 32.	Long-term adverse effects; if the USTs are not removed, 141 ACS could incur fines for non-compliance of proper operation and maintenance of the UST System.
Health and Safety	Short-term less-than-significant adverse effects and long-term beneficial effects on health and safety. All construction, demolition (and removal), and infrastructure renovation and activities would be accomplished in accordance with applicable federal, commonwealth, and local health and safety regulations. Long-term beneficial effects from removal of potential health and safety hazards, renovation of old buildings, repaving the internal roads and parking lot, and renovating the base entrance to meet the AT/FP standards.	Effects from implementing Alternative Sites 1 or 3 would be similar to the Preferred Alternative.	Long-term adverse effects; non-compliant with DoD and NGB regulations and standards.
Transportation and Circulation	Short-term less-than-significant adverse and long-term beneficial effects. Short-term effects would be caused by construction activities and would have no appreciable effect on transportation. Long-term beneficial effects from upgrades to the transportation infrastructure, primarily the renovation of the existing main gate.	Effects from implementing Alternative Sites 1 or 3 would be similar to the Preferred Alternative.	Adverse effects; further deterioration of the parking lots and roads and main gate would remain non-compliant with DoD AT/FP requirements.

Resource Area	Proposed Action/Preferred Alternative	Weapon System Facility (Project No. 2) – Alternative Sites 1 or 3	No Action Alternative
Water Resources	<p>Short-term less-than-significant adverse effects from temporary site-specific changes during construction and renovation activities. All construction and demolition activities would be conducted in accordance with applicable federal, commonwealth, or local laws and regulations or with permits. Weapon System Facility Alternative Site 2; already covered in concrete; no increase in impervious surface area from construction. All construction projects would be checked for consistency with Puerto Rico Coastal Zone Management regulations and policies. If required, PRANG would obtain a notice of Coastal Zone Management Act consistency or a waiver of such notice from the Puerto Rico Planning Board for the proposed projects at Punta Borinquen GSU. Removal of USTs would result in approximately 1,950 SF less impervious area; long-term beneficial effects from a slight decrease in stormwater generation. No effects expected from operations.</p>	<p>Effects from implementing Alternative Site 3 would be similar to the Preferred Alternative.</p> <p>Construction of Weapon System Facility at Alternative Site 1 would add approximately 2,100 SF of impervious area and removal of the USTs r would eliminate 1,950 SF of impervious area, resulting in a 150 SF net increase in impervious area. A slight increase in stormwater generation; long-term less than significant effects.</p> <p>Construction of Weapon System Facility at Alternative Site 3 would demolish 2,150 SF of Building 32 and, add approximately 2,100 SF impervious area. USTs removal would reduce 1,950 SF of impervious area. Net decrease of approximately 2,000 SF; long-term beneficial effects from a slight decrease in stormwater generation.</p>	No effects.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes relevant and existing environmental conditions for resources that potentially would be affected by the Proposed Action. It also discusses the environmental consequences of implementing the Proposed Action and alternatives, including the No Action Alternative. In compliance with NEPA, CEQ, and DAF NEPA implementing regulations, the description of the affected environment focuses on only those aspects of the environment potentially subject to effects. In general, the description of the affected environment and assessment of environmental consequences focus on the Punta Borinquen GSU and the Municipality of Aguadilla, PR.

The resources carried forward for detailed analysis are air quality, biological resources, cultural resources, hazardous materials and wastes, health and safety, transportation, and water resources. This section describes the affected environment and the environmental consequences of implementing the Proposed Action or alternatives for these resource areas. Section 3.9 discusses cumulative effects of the Proposed Action.

Note that only the project to construct a Weapon System Facility, Project No. 2 (TKWR182304) has alternative sites. Although effects could vary depending on where the Weapon System Facility is constructed, the effects of operations would be the same regardless of location. Therefore, the environmental consequences sections discuss the alternative sites only if there are differences in construction effects.

3.1 AIR QUALITY

3.1.1 Definition of Resource

Air pollution is the presence in the outdoor atmosphere of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, or vapor) in quantities and of characteristics and duration that are injurious to human, plant, or animal life. Air quality as a resource incorporates components that describe air pollution within a region, sources of air emissions, and regulations governing those emissions. This section discusses the existing conditions, a regulatory overview, and a summary of greenhouse gases (GHGs) and global warming.

3.1.2 Existing Conditions

USEPA Region 2 and the DNER regulate air quality in Puerto Rico. The CAA assigns USEPA responsibility for establishing the primary and secondary NAAQS (40 CFR Part 50), which specify acceptable concentration levels of six criteria pollutants: CO, ground-level O₃, Pb, NO₂, respirable PM (measured as PM less than 10 microns in diameter [PM₁₀] and PM less than 2.5 microns in diameter [PM_{2.5}]), and SO₂. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, and long-term NAAQS (annual

averages) have been established for pollutants contributing to chronic health effects. Table 3-1 outlines the NAAQS for each criteria pollutant. Each state has the authority to adopt standards stricter than those established under the federal program; however, Puerto Rico has accepted the federal standards.

Table 3-1. National Ambient Air Quality Standards

Pollutant		Primary/ Secondary	Averaging time	Level	Form
Carbon monoxide (CO)		Primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		Primary and secondary	Rolling 3-month average	0.15 µg /m ³	Not to be exceeded
Nitrogen dioxide (NO ₂)		Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Primary and secondary	Annual	53 ppb	Annual mean
Ozone (O ₃)		Primary and secondary	8 hours	0.070 ppm	Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years
Particulate matter	(PM _{2.5})	Primary	Annual	12 µg /m ³	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg /m ³	Annual mean, averaged over 3 years
		Primary and secondary	24 hours	35 µg /m ³	98th percentile, averaged over 3 years
	(PM ₁₀)	Primary and secondary	24 hours	150 µg /m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide (SO ₂)		Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Sources: 40 CFR § 50.1–50.12, USEPA 2021a.

Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter.

3.1.2.1 Local Air Quality

Areas in violation of the NAAQS are designated as nonattainment areas. Areas with criteria pollutant levels below the NAAQS are designated as attainment areas. USEPA has designated

the Aguadilla Municipality and, therefore, all areas associated with the proposed action, as an attainment area for all criteria pollutants (USEPA, 2021b).

3.1.2.2 Permitting Overview

The Punta Borinquen GSU is considered a minor source of air emissions; meaning its actual or potential emissions are below the major source thresholds for air pollutants. The 141 ACS operates two emergency generators authorized under DNER's Permit No. PFE-LC-RM-03-0821-0401-II-O. Table 3-2 lists the GSU's 2017 emissions of criteria pollutants from stationary and mobile sources.

Table 3-2. 2017 Emissions for Significant Stationary and Mobile Sources

Pollutant	Emissions (tpy)	
	Stationary	Mobile
Carbon monoxide (CO)	5.43	0.19
Nitrogen oxides (NO _x)	23.04	0.16
Volatile organic compounds (VOCs)	2.48	0.03
Particulate matter (PM ₁₀ /PM _{2.5})	1.61	0.02
Sulfur dioxide (SO ₂)	0.35	0.01

Source: AECOM 2020.

Note: tpy = tons per year.

New stationary sources of air emissions, such as boilers and backup generators, would require permits to construct. No new stationary sources of air emissions, however, are proposed to be installed at Punta Borinquen GSU under the Proposed Action.

3.1.2.3 General Conformity

The federal General Conformity rule (40 CFR Part 93) under the CAA applies to federal actions in nonattainment and maintenance areas. Because Punta Borinquen GSU is in an attainment area for all criteria pollutants, the General Conformity rule does not apply to the Proposed Action.

3.1.2.4 Climate and Greenhouse Gases

Aguadilla's average high temperature is approximately 87 degrees Fahrenheit (°F) from mid-June through early October, and the average low temperature is about 70°F from January to March (NOAA, 2021). The average annual precipitation is approximately 78 inches. The wettest month of the year is August, with an average rainfall of approximately 10.5 inches; the driest month is December, with approximately 2.4 inches of rainfall.

GHGs are components of the atmosphere that trap heat relatively near the surface of the Earth; therefore, they contribute to the greenhouse effect and climate change. Most GHGs occur naturally in the atmosphere; however, increases in GHG concentrations result from human

activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add CO₂, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Whether rainfall would increase or decrease remains difficult to project for specific regions (IPCC, 2018).

EO 14008, *Tackling the Climate Crisis at Home and Abroad* (2021), outlines policies to reduce GHG emissions and to bolster resilience to the impacts of climate change. The EO directs CEQ to review, revise, and update its 2016 final guidance, *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*. The CEQ guidance specifically requires DoD agencies to quantify GHG emissions in NEPA assessments and review their actions in the context of future climate scenarios and resiliency.

3.1.3 Environmental Consequences

3.1.3.1 Significance Criteria

The Proposed Action would be considered to have a significant effect on air quality if total emissions attributable to it would contribute to a violation of any federal, state, or local air regulation.

3.1.3.2 Preferred Alternative

Summary. Short-term less-than-significant adverse effects and long-term beneficial effects on air quality would be expected from implementing the Preferred Alternative. Emissions attributable to the Preferred Alternative would not contribute to a violation of any federal, commonwealth, or local air regulation. No new major or minor stationary source of air emissions would be established under the Preferred Alternative.

The estimated effects on air quality from implementing the Preferred Alternative outlined in Table 2-1 are for a single 12-month period. This is considered the reasonable upper bound of effects, and impacts would likely be less than those described in this section.

Construction. The NGB used the DAF's Air Conformity Applicability Model (ACAM) to estimate the total emissions attributable to the Preferred Alternative. The model uses "insignificance indicators" to indicate the significance of potential impacts on air quality based on current ambient air quality relative to the NAAQSs. The insignificance indicators for all criteria pollutants are 25 tpy for Pb and 250 tpy all other criteria pollutants for actions occurring in areas that are not within 5 percent of any NAAQS. In areas that are within 5 percent of any NAAQS the insignificance indicators are 25 tpy for Pb and 100 tpy for all other criteria pollutants. For purposes of this analysis, the NGB assumed that all construction, demolition, and renovation activities would be compressed into one 12-month period. Therefore, regardless of the ultimate implementation

schedule, annual emissions would be less than those specified in this EA. Construction emissions were estimated for construction equipment and privately owned vehicles during site grading, construction, architectural coatings work, and paving operations (Table 3-3). The estimated emissions from the proposed activities would be below the insignificance indicators; therefore, the level of effects would be less than significant. Minor changes in facility siting and design and moderate changes in quantity and types of equipment used would not substantially change these emission estimates, and would not change the level of effects under NEPA.

A summary of emissions calculated using the ACAM is provided in Appendix C.

Table 3-3. Estimated Air Emissions Compared to Insignificance Indicators

Pollutant	Construction emissions (tpy)	Rate for areas not within 5% of any NAAQS (tpy)	Rate for areas within 5% of any NAAQS (tpy)	Exceeds thresholds? [Yes/No]
VOCs	0.5	250	100	No
NO _x	3.3			
CO	5.2			
SO ₂	0.0			
PM ₁₀	0.3			
PM _{2.5}	0.1			

Source: ACAM model (see Appendix C).

Notes: NO_x = oxides of nitrogen; SO_x = oxides of sulfur; VOCs = volatile organic compounds.

NGB would comply with applicable Puerto Rico and municipality regulations (such as controlling fugitive dust and open burning) when constructing the new facilities. Reasonable precautions to control fugitive dust might include using water to control dust from building construction, road grading, or land clearing. In addition, the Preferred Alternative would proceed in full compliance with current Puerto Rico air quality regulations through compliant practices and/or products.

Operations. The Preferred Alternative would have a long-term beneficial effect on air quality. Removing the two USTs and fuel pump would reduce operational emissions of VOCs by approximately 0.2 tpy. Otherwise, implementing the Preferred Alternative would not change air emissions attributable to operations at the Punta Borinquen GSU.

Greenhouse Gases and Climate Change. This EA examines GHGs as a category of air emissions. It also looks at temperature and precipitation trends to determine whether the affected environment or the proposed facilities would be affected by climate change. This EA does not attempt to measure the actual incremental effects of GHG emissions from the Preferred Alternative. There is a lack of consensus on how to measure those effects, and no criteria identifying monetized values to be considered significant for NEPA purposes have been established. Table 3-4 compares the estimated GHG emissions from the Preferred Alternative to

global, nationwide, and commonwealth-wide GHG emissions. The estimated increase would be minutely small.

Table 3-4. Global, Countrywide, and Puerto Rico GHG Emissions

Scale	CO ₂ e emissions (MMT/year)	Estimated Change caused by the Preferred Alternative
Global	43,125	0.000002%
United States	5,249	0.00002%
Puerto Rico	0.209	0.000005%
Preferred Alternative	0.001	-

Sources: ACAM (see Appendix C); USEIA 2021.

Note: MMT = million metric tons.

Puerto Rico is in the Caribbean climate region of the United States where climate change is expected to contribute to increased heat stress, sea level rise, a significant decrease in rainfall, and threats to critical marine resources, including fisheries (NCA4, 2018). In Puerto Rico, the annual number of days with temperatures above 90 °F has increased over the last 45 years. Average annual air temperatures, the number of days over 95 °F, and the number of nights over 85 °F are projected to continue to increase. Global climate models project about a 1.5 to 4 °F increase in average temperatures for the U.S. Caribbean by 2050.

Table 3-5 outlines potential climate stressors and their effects on the proposed facilities. The Preferred Alternative in and of itself is 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 climate stressor would have appreciable effects on any element of the Preferred Alternative.

Table 3-5. Effects of Potential Climate Stressors

Potential climate stressor	Effects on the Preferred Alternative
Increasing variability in rainfall events	Negligible
Sea level rise	Negligible
Temperature increases	Negligible
Degradation of coral and other marine habitats	Negligible
Harm to water resources, agriculture, wildlife	Negligible

Source: (NCA4, 2018).

3.1.3.3 Weapon System Facility (Project No. 2) Alternative Sites 1 or 3

Effects on air quality from implementing Weapon System Facility Alternative Site 1 would be similar to those under the Preferred Alternative.

Emissions of air pollutants attributable to constructing the Weapon System Facility at Alternative Site 3 would be greater than under the Preferred Alternative or Weapon System Facility Alternative Site 1 because under Weapon System Facility Alternative Site 3, Building 32 would be demolished (see Appendix C). All air pollutants listed in Table 3-3 would be slightly greater (less than 0.5 tpy for any single pollutant) under Weapon System Facility Alternative Site 3 compared to the Preferred Alternative. Effects on air quality would still be short-term less-than-significant and no insignificance indicator thresholds would be exceeded.

3.1.3.4 Regulatory Requirements and BMPs

NGB and its contractors would follow BMPs and regulatory requirements during construction and operation of the Preferred Alternative. Construction would proceed in full compliance with current local and federal requirements through compliant practices and/or products.

NGB and its contractors would comply with all applicable air pollution control regulations. In addition, no one would handle, transport, or store any material in a manner that might allow unnecessary amounts of contaminants to become airborne. Reasonable measures might be required to reduce fugitive dust, including the following:

- Using water for dust control during road grading and land clearing.
- Covering open equipment for conveying or transporting material likely to create objectionable air pollution when airborne.
- Minimizing and controlling emissions from heavy equipment used during project implementation by maintaining strict supervision and adequate maintenance of equipment.
- Before construction, obtaining a construction permit for an emission source (a Consolidated General Permit through the Puerto Rico Permit Management Office).
- Promptly removing spilled or tracked dirt or other materials from paved streets.

3.1.3.5 No Action Alternative

No effects on air quality would result from implementing the No Action Alternative. Emissions at the Punta Borinquen GSU would not change from their current levels.

3.2 BIOLOGICAL RESOURCES

3.2.1 Definition of Resource

Biological resources include native and naturalized plants and animals, including the following: vegetation; wildlife; and threatened, endangered, and sensitive species in a specific area. They also include habitats in which the plants and animals live and grow.

3.2.2 Existing Conditions

The Punta Borinquen GSU is almost entirely developed. Biological resources on the GSU consist of maintained lawn areas and scattered landscaping trees. The GSU provides no habitat for migratory bird nesting or protected species in Puerto Rico. USFWS lists no federally or commonwealth listed endangered or threatened plant or animal species as occurring in the project area.

3.2.2.1 Vegetation

Punta Borinquen GSU vegetation primarily consists of open, maintained grassland and developed land with ornamental landscaped plants (AECOM, 2021). Undeveloped areas of the GSU are vegetated in maintained landscaped lawn areas with scattered trees. A few trees also provide shade in parking areas.

3.2.2.2 Wildlife

Bird, mammal, insect, and reptile observations were recorded throughout Punta Borinquen GSU during reconnaissance-level fauna surveys in 2017. Fauna species observed included birds, invertebrates, and reptiles common to Puerto Rico (AECOM, 2021).

3.2.2.3 Threatened, Endangered, or Sensitive Species

Federally Listed Species. USFWS lists no federally listed plant or animal species as occurring within the project area (see USFWS letter dated 04 January 2022 in Appendix A).

Migratory Birds. Of Puerto Rico's 354 recorded bird species, approximately 133 are known to breed on the island. Waterbirds are an important component of the local bird population, representing more than 35 percent of the species recorded; 45 species are known to breed on the island. Puerto Rico has diverse wetlands, mangrove systems, freshwater swamps, and salt flats. Major wetland areas include Caño Tiburones, Laguna Tortuguero, Laguna Cartagena, San Juan and Jobos bay estuaries, and Cabo Rojo salt flats. None of these areas are in close proximity to Aguadilla.

Puerto Rico-Listed Species. Puerto Rico lists 45 fauna and 49 flora species as threatened or endangered. DNER considers several species of bats to be vulnerable, although no bat species are included on the USFWS list of threatened or endangered species or critical habitats for Puerto Rico (Rivera, 2020). The Puerto Rico Bat Conservation Program, led by Dr. A. Rodríguez, conducted a bat survey in June and July of 2021 on the GSU (Appendix D). Two species were identified acoustically at the GSU: velvety free-tailed bat (*Molossus molossus*) and sooty mustached bat (*Pteronotus quadridens*). Big brown bat (*Eptesicus fuscus*) was recorded only once during the 12 survey dates. None of the species identified during the survey are considered vulnerable in Puerto Rico. Surveys with ANABAT Walkabout Active Bat Detectors did not suggest the occurrence of bats roosting in buildings.

3.2.3 Environmental Consequences

3.2.3.1 Significance Criteria

Effects on biological resources would be considered significant if the Proposed Action would reduce the distribution or viability of species or habitats of concern, including take of a listed species.

3.2.3.2 Preferred Alternative

Summary. Implementing the Preferred Alternative would have short-term less-than-significant adverse effects and no long-term effects on biological resources. Short-term effects would be caused by displacement of local common wildlife species during construction activities.

Construction. Construction activities would have less-than-significant effects on biological resources. Two projects (Remove the Radar Dome/ Reroof Building 7 and Renovate the Main Building (Building 1)) would involve demolition or repair of an existing building. If these projects were executed between April and October when bats are likely to be roosting, the structures would be inspected before commencing construction to avoid disturbing any roosting bats. The Weapon System Facility at the Preferred Alternative site would be new construction and would not have any effect on roosting bats.

Operations. Operations and maintenance activities would have no effects on biological resources. The nature and overall level of operations at the base would be similar to existing conditions.

3.2.3.3 Weapon System Facility (Project 2) Alternative Sites 1 or 3

Construction. The effects of constructing the Weapon System Facility at Alternative Sites 1 or 3 would have similar effects on biological resources as the Preferred Alternative. Alternative Site 3 would require demolition of Building 32 and, if the project is executed between April and October when bats are likely to be roosting, the structure would be inspected before commencing demolition to avoid disturbing any roosting bats.

Operations. The effects on biological resources of operating and maintaining a Weapon System Facility at Alternative Sites 1 or 3 would be similar to those under the Preferred Alternative.

3.2.3.4 Regulatory Requirements and BMPs

Buildings targeted for demolition or renovation would be inspected for roosting bats. If any bats are found, humane exclusion would be implemented between October and April, when pups are less likely to be found.

3.2.3.5 No Action Alternative

No effects on biological resources would be expected from implementing the No Action Alternative. Existing conditions would remain unchanged, and there would be no effects on biological resources.

3.3 CULTURAL RESOURCES

3.3.1 Definition of Resource

Cultural resources are defined as prehistoric or historic districts, sites, buildings, structures, and objects considered important to a culture, subculture, or community for scientific, traditional, religious, and other purposes. They include archaeological, architectural, and traditional resources. Archaeological resources consist of artifacts, features, or other archaeological indications of past human life or activities from which archaeologists interpret information about history or prehistory. Architectural resources include buildings, structures, landscapes, and objects that document the history of an area and possibly the history that predates the area. NGB defined the cultural resources Area of Potential Effect (APE) as staging areas, areas of proposed ground disturbance, and facilities that would be renovated. The SHPO did not comment on the APE in their letter of December 22, 2021 (see SHPO letter in Appendix A).

Section 106 of the NHPA requires federal agencies to determine whether any historic resources could be affected by the Proposed Action, and to allow the ACHP (through the SHPO) 30 days to comment on the undertaking. Generally, a historic property that is a cultural resource more than 50 years old is included in the NRHP. Resources less than 50 years old may be considered under Criterion Consideration G, which addresses districts, sites, buildings, structures, and objects that might have achieved *exceptional* significance. Within the DoD, Criterion Consideration G is usually applied to evaluate architecture that dates to the Cold War era. Existing Conditions

3.3.1.1 Archaeological and Architectural Resources

PEER Consultants conducted a cultural resources survey for the PRANG base at the Punta Borinquen Air National Guard Station, Aguadilla, PR in 2000. The 2000 survey report and the 2000 addendum documented the intensive archaeological survey of all areas not occupied by buildings or pavement and the survey of 13 buildings (PEER, 2000a). PEER discovered no archaeological resources, and they recommended all of the 13 buildings as not eligible for listing in the NRHP.

The PR SHPO review letter of May 23, 2000 (SHPO Control 99-4981) regarding the cultural resources survey requested additional information on the archaeological findings (provided in the Addendum Report) and noted that there was insufficient information to support concurrence with

the architectural recommendations. There was no additional information on the architectural evaluations provided in the Addendum Report (PEER, 2000b).

In 2020, Brockington and Associates, Inc completed an architectural inventory of all buildings at *Muñoz [sic] ANG Base (ANGB), Punta Salinas Air National Guard Stations (ANGS), and Punta Borinquen ANGS* (Brockington, 2020). That report found “none of the buildings at the Punta Borinquen ANGS are individually eligible” and “no historic district exists” (Brockington, 2020). Six post-Cold War buildings were not evaluated; however, it was recommended that no evaluation would be needed until those resources reach 50 years of age. These six resources, constructed between 1992 and 1999, will not approach the 50-year threshold until 2042. The PR SHPO review letter of April 8, 2021, concurred with the findings and recommendations of the 2020 report.

In October 2021, Tetra Tech conducted a review of the archaeological site files and the NRHP files for an area defined by a one-mile radius around the facility. One NRHP-eligible archaeological site, two NRHP-listed lighthouses, one NRHP-eligible water canal, and one NRHP-eligible historic district are within the one-mile radius. The nearest of these is 0.6 miles from the Punta Borinquen GSU.

3.3.1.2 Traditional Cultural Resources

There are no traditional cultural properties or places recorded or suggested to exist within or near the APE. There are no federally recognized tribes affiliated with the precontact or historic period cultures of Puerto Rico; therefore, NGB did not conduct tribal consultation to identify traditional cultural resources.

3.3.2 Environmental Consequences

3.3.2.1 Significance Criteria

Effects on cultural resources would be considered significant if the NGB did not conduct and complete proper coordination with the PR SHPO before physically altering, damaging, or destroying all or part of a cultural resource or introducing visual or audible elements that are out of character with a historically sensitive property.

Under Section 106 of the NHPA, an action might have no effects on historic properties (a no historic properties finding), no adverse effects on historic properties, or adverse effects on historic properties. An adverse effect under NHPA Section 106 would not necessarily be significant under NEPA if effects were not considered significant and could be mitigated. Measures developed to minimize or mitigate adverse effects on historic properties under Section 106 could result in an action having no significant impacts on cultural resources under NEPA.

3.3.2.2 Preferred Alternative

Summary. Implementing the Preferred Alternative would have no effects on historic properties.

Construction. There would be no effects on historic properties from construction related to the Preferred Alternative. There are no historic properties present at the Punta Borinquen GSU, and the Preferred Alternative would not adversely affect the sites and historic properties within a one-mile radius. Therefore, the NGB determined that no historic properties would be affected. The NGB consulted with the PR SHPO via letter dated November 12, 2021. In a letter dated December 22, 2021, the PR SHPO concurred with the finding of no historic properties (both letters are included in Appendix A).

Operations. There would be no effect on historic properties from operations under the Preferred Alternative.

3.3.2.3 Weapon System Facility (Project No. 2) Alternative Sites 1 or 3

There would be no effect on historic properties from the construction or operation of a Weapon System Facility at Alternative Sites 1 or 3.

3.3.2.4 Regulatory Requirements and BMPs

There would be no effect on historic properties from construction or operations under the Preferred Alternative. Therefore, no activities other than compliance with existing regulations, permits, and plans would be required to remain at no effect.

3.3.2.5 No Action Alternative

No effect on historic properties would be expected. Under the No Action Alternative, the construction, demolition, renovation, and repair projects would not occur. Existing conditions would remain unchanged, and there would be no effect on historic properties.

3.4 HAZARDOUS MATERIALS AND WASTES, SOLID WASTE, AND OTHER CONTAMINANTS

3.4.1 Definition of Resource

The term “hazardous materials” refers to substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. § 9601.33), and the term “hazardous waste” refers to wastes defined as hazardous by the Solid Waste Disposal Act, as amended by Resource Conservation and Recovery Act of 1976 (42 U.S.C. §6901 *et seq.*) (RCRA). Hazardous substances are materials that, by any exposure pathway (skin, lungs, ingestion, or mucus membranes), may cause serious physical damage (e.g., cancer, genetic mutation, or harm fetal health) to a person or organism when improperly treated, stored,

transported, disposed of, or otherwise managed. These substances are to be managed according to regulatory guidelines for the safety of public health and the environment.

AFPD 32-70, *Environmental Quality*, and the AFI 32-7000 series, *Environmental Management*, incorporate the requirements of all federal regulations and other AFIs and DoD directives for the management of hazardous materials, hazardous wastes, and special hazards. Evaluation extends to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action.

Special hazards are substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include ACM, LBP, and PCBs. The TSCA authorizes USEPA to regulate these special hazard substances.

In Puerto Rico, hazardous materials and wastes, solid waste, and other contaminants are regulated by the:

- Regulations for the Control of Hazardous Solid Waste (3497)
- Regulations for the Management of Non-Hazardous Solid Waste (5717)
- Regulations for the Control of the Atmospheric Contamination (5300)
- Regulations for the Control of the Lead Based Paint Mitigation Activities (6594)

3.4.2 Existing Conditions

The Punta Borinquen GSU has a base-specific hazardous materials and waste management program implemented through the 156 WG Hazardous Waste Management Plan (HWMP) (NGB, 2019). Hazardous materials are used throughout the GSU during various light maintenance and industrial-type operations and include lubricating oils, chlorinated solvents and other solvents/degreasers, paints and thinners, and acids. Hazardous and petroleum wastes from those activities include waste paint and solvents, waste corrosives and batteries, and waste alcohol. The GSU is regulated by the DNER as it is a very small quantity generator of hazardous wastes and has an assigned USEPA Identification number of PR6572899999. As a very small quantity generator, the facility generates 100 kilograms or less per month of hazardous waste or one kilogram or less per month of acutely hazardous waste. Defense Logistics Agency Disposition Services manages the disposal of the waste generated at the base (PRANG, 2022a). Hazardous waste generated at the various points areas of the GSU is transported to a Central Accumulation Point (Hazardous Storage Building near Building 11), where hazardous waste is stored prior to transportation for recycling or disposal (NGB, 2019).

ACM, LBP, and PCBs. ACM and LBP are special hazards, with specific handling and abatement requirements that differ from other hazardous wastes. In 2013, NGB conducted an environmental baseline survey (EBS) of the 6.5-acre Punta Borinquen GSU and the contiguous area of

approximately 15.47 acres to the north and west of the GSU (NGB, 2013 and 2014a). The EBS was conducted to investigate the parcels for the presence of hazardous and toxic substances and other materials that could affect human health and the environment. The 2013 EBS stated that an asbestos survey was performed at all the buildings on the GSU, and the base was determined to be entirely asbestos free (NGB, 2013 and 2014a). The 2013 EBS also reported that LBP had been encountered on the stair rails of the historical maintenance facility (Building X) and that it was removed prior to demolition of the building. According to the 2013 EBS, the southernmost portion of the approximately 39,000-SF-Building 1 was completely remodeled in 1978, with only the foundation of that building remaining. The northernmost portion of the building was constructed in 1991. Therefore, the part of Building 1 remodeled in 1978 could contain LBP. However, the remaining buildings at the GSU, including Building 7, were constructed post-1978 and are unlikely to contain LBP (NGB, 2013 and 2014a). Similarly, the EBS reported that there is no PCB equipment, PCB-contaminated equipment, or pad-mounted electrical transformers on the GSU (NGB, 2013, and 2014a).

Environmental Restoration Program. The objectives of the Environmental Restoration Program (ERP) are to identify and fully evaluate any areas suspected to be contaminated with hazardous materials caused by past operations and to eliminate or control any hazards to public health, public welfare, or the environment. The following two projects under the Preferred Alternative would be located on former ERP sites:

- Project No. 1, TKWR212302, Remove USTs: the project is located at Restoration Site 1, Vehicle Fueling Area and USTs (Facility 30).
- Project No. 2, TKWR182304, Construct a Weapon System Facility Preferred Alternative site (Alternative Site 2): the site northwest of Building 33 for the proposed project is near Restoration Site 3, Former UST (north of Building 3).

Both ERP sites were recommended for no further action in the 2014 Final Site Investigation (NGB, 2014b).

Emerging Contaminants. Per- and polyfluoroalkyl substances (PFAS) are emerging contaminants with no maximum contaminant level guidelines from the USEPA because their effects on humans and the environment are still under active research (USEPA, 2016). The activities conducted at Punta Borinquen GSU did not require aqueous film-forming foam to be stored, used for training activities, or used for fire suppression. Therefore, the GSU is not suspected of having releases of PFAS (PRANG, 2022b).

3.4.3 Environmental Consequences

3.4.3.1 Significance Criteria

Effects would be considered significant if the Proposed Action would result in any of the following: cause or increase the risk of human exposure to hazardous substances without adequate protection; substantially increase the risk of spills or releases of hazardous substances; disturb the progress of cleanup activities so that adverse effects on human health or the environment could result; conflict with established land use controls; or result in noncompliance with applicable federal, state, or local laws and regulations or with permits related to hazardous materials and waste.

3.4.3.2 Preferred Alternative

Summary. Implementing the Preferred Alternative would have short- and long-term less-than-significant adverse effects from hazardous material use and hazardous waste generation. Short-term effects would be caused by the removal of the two USTs (a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank) northeast of Building 11. Long-term effects would be the result of using hazardous materials and hazardous waste generation during mission support activities. The proposed activities would not require subsurface soil excavation to depths that could affect groundwater. The Preferred Alternative would reduce the volume of fuel in the GSU and the number of load/unload fuel activities in the facility.

Construction. Under the Preferred Alternative, there would be an increase in hazardous material use and hazardous waste generation; however, the increase would be both limited and temporary. The safe handling, storage, and use procedures specified under the HWMP, in accordance with all federal, commonwealth, and local regulations, would be implemented. Solid wastes generated over the course of the construction period would be collected and transported off-site to an authorized landfill in accordance with applicable federal, commonwealth, and local regulations. Construction debris would be recycled or reused as much as possible in accordance with the DAF Qualified Recycling Program (DoD Manual 4160.28) or would be managed in accordance with AFI 32-7042, *Waste Management*. These effects would be less than significant.

Contaminated media, if encountered, would be managed and disposed of in accordance with all appropriate commonwealth and federal regulations and guidelines. The 2013 EBS reported that ACM is not present on the GSU. The part of Building 1 remodeled in 1978 could contain LBP; therefore, prior to commencing renovation activities, the contractor would test for and abate if LBP is found in the building. NGB's Asbestos Management Plan, BMPs, and applicable federal, commonwealth, local, and regulations would be followed during all demolition activities.

Operations. The Preferred Alternative would be expected to result in long-term less-than-significant adverse effects associated with hazardous materials and wastes. Operations at the GSU after implementation of the Preferred Alternative would be similar to current operations.

3.4.3.3 Weapon System Facility (Project No. 2) Alternative Sites 1 or 3

Alternative Site 1 is located near Restoration Site 3, where an UST was installed and removed in the vicinity of Building 3. Alternative Site 3 for the Weapon System Facility is not located near any Restoration Sites. Alternative Site 3 would require demolition of Building 32, a recreation center constructed in 1993; ACM, LBP, and PCBs are not present in the building.

3.4.3.4 Regulatory Requirements and BMPs

Removal of the USTs (Project No. 1, TKWR 212302) involves the management of hazardous materials. To undertake this project, the owner must apply for and obtain a Closure Permit from the DNER in accordance with Part II of the Regulation for the Control of Underground Storage Tank. The petition must provide justification for the closure and submit all relevant information as an attachment to the permit application. Before USTs are removed, the local and commonwealth government must be informed of the tank removal plan 30 days prior to the day of removal. The owner must empty and clean the USTs by extracting all liquids and accumulated sludge as well as perform the corresponding sampling procedure, disposal, and other related activities in accordance with the closure guidelines adopted by the DNER. The Close Report shall be filed with the DNER within 90 days after closing activities are completed. The report shall include closing activities held, sampling procedures, and laboratory results.

Other proposed projects would involve the use of hazardous materials and wastes incidentally, such as for vehicle and equipment operation and maintenance. Such uses would be conducted in accordance with the PRANG HWMP (PRANG, 2019).

3.4.3.5 No Action Alternative

Long-term adverse effects would be expected from the implementation of the No Action Alternative. The 141 ACS could incur fines for non-compliance of proper operation and maintenance of the UST System.

3.5 HEALTH AND SAFETY

3.5.1 Definition of Resource

Construction site safety involves complying with regulatory requirements intended to reduce the risk of illness, injury, death, and property damage. AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*, implements DAF Policy Directive (AFPD) 91-3, *Occupational Safety and Health*, by outlining the DAF Office of Safety and Health

Program, the purpose of which is to protect personnel from occupational illness, injury, and death and to minimize the loss of resources by managing risks. In conjunction with the DAF Mishap Prevention Program, these standards ensure all DAF workplaces meet federal safety and health requirements.

3.5.2 Existing Conditions

The Building 7 radar tower was built in 1982 to provide radar coverage. All equipment has been removed from the building, which contains 3,882 SF of storage space. The structure has a two-story, ten-sided base with corrugated fiberglass walls and a polygonal dome atop the structure. Between the dome and the base is an exterior catwalk with a metal rail. The building has a concrete foundation, metal doors, and six-pane hopper metal frame windows and is in fair condition (PEER, 2000a).

Daily operations and maintenance activities at the facility are conducted in accordance with applicable DAF safety regulations, published DAF Technical Orders, and standards prescribed by AFPD 90-8, *Environmental, Safety & Occupational Health Management and Risk Management*. Emergency response activities, including fire safety, spill response, and evacuation procedures, are covered in the 141 ACS Oil and Hazardous Substances Spill Prevention and Response Plan and Storm Water Pollution Prevention Plan (SWPPP).

Antiterrorism Force Protection Installation Planning guidelines for military installations are intended to reduce the risk of terrorism and address a range of considerations that include access to the installation and facilities on the installation, facility siting, exterior design, interior infrastructure design, and landscaping, as specified in UFC 4-010-01 (DoD 2020). The intent of this siting and design guidance is to improve security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack.

3.5.3 Environmental Consequences

3.5.3.1 Significance Criteria

Health and safety effects would be considered significant if the action would substantially increase risks to DAF personnel or the general public associated with construction site or ground safety during operations on the GSU.

3.5.3.2 Preferred Alternative

Summary. Implementing the Preferred Alternative would have short-term less-than-significant adverse effects and would have long-term beneficial effects on health and safety. Short-term effects include potential worker injury during construction, renovation, or demolition activities. Long-term beneficial effects would be realized from compliance with construction standards.

Construction. All construction, demolition (and removal), renovation, and repair activities would be accomplished in accordance with applicable federal, commonwealth, and local health and safety regulations, including Occupational Safety and Health Administration (OSHA) and DAF programs. These include the exclusion of unauthorized personnel within construction areas, the use of personal protective equipment, and appropriate safety training. During renovation activities at the main gate, there would be temporary traffic delays and detours that would challenge AT/FP protocols; however, these would be minimized by a phased approach or use of internal routing. Under the Preferred Alternative, the Weapon System Facility would be built northwest of Building 33 (Alternative Site 2), an area currently covered in concrete.

Hazardous materials and waste would be handled in accordance with the HWMP. Less than adverse health effects during demolition would be expected because health and safety guidelines will be followed, and all the work would be done by a DNER-authorized company.

Operations. The Preferred Alternative would have long-term beneficial effects on health and safety from the removal of hazards posed by the Radar Dome and old building components and the USTs, repaving the internal roads and parking lot, and upgrading the main gate. Operations at the Punta Borinquen GSU after implementation of the Preferred Alternative would be similar to current operations.

3.5.3.3 Weapon System Facility (Project No. 2) Alternative Sites 1 or 3

Effects on health and safety from constructing and operating a Weapon System Facility at Alternative Sites 1 or 3 would be similar to those under the Preferred Alternative. Alternative Site 3 would require demolition of Building 32 and, the demolition (and removal) activities would be accomplished in accordance with applicable federal, commonwealth, and local health and safety regulations, including OSHA and DAF programs.

3.5.3.4 Regulatory Requirements and BMPs

All construction, demolition (and removal), and infrastructure renovation activities would be accomplished in accordance with applicable federal, commonwealth, and local health and safety regulations, including OSHA and DAF programs.

3.5.3.5 No Action Alternative

Long-term adverse effects on health and safety would be expected from the implementation of the No Action Alternative. Without the required upgrades to the main gate, the GSU would not have robust security measures in place to safeguard personnel and real property. Hazards posed by the Radar Dome and old building components, the USTs and, deteriorating internal roads and parking lots would remain addressed.

3.6 TRANSPORTATION AND CIRCULATION

3.6.1 Definition of Resource

Transportation and circulation are defined as the system of roadways, highways, and all other transportation networks that could reasonably be affected by the Proposed Action. Traffic volume relates to the number of vehicles on roadways and highways that could change because of the Proposed Action. The transportation system considered with respect to the Proposed Action is the pavements and roads on Punta Borinquen GSU and PR-107, the only road adjacent to the site.

3.6.2 Existing Conditions

Transportation near Punta Borinquen GSU is achieved mainly via road and street networks. PR-107, also known as Pedro Albizu Campos Road, is a north-south road 2.8 miles (4.5 kilometers) long that forms the eastern boundary of Punta Borinquen GSU and provides access to and from the area. Restricted entry to the Punta Borinquen GSU is provided at the main gate on PR-107. The Punta Borinquen GSU has one road which, from the main gate, is a loop that passes all facilities and then returns back to the main gate location. Traffic on PR-107 and the Punta Borinquen GSU is light. Visitors are registered and are accompanied by a military representative to the designated area. The existing road network is satisfactory for current employment and visitor levels at the base. No deficiencies have been identified.

3.6.2.1 Gates

The site has two gates fronting PR-107; however, the base uses only one entrance. The primary entrance (main gate) is located on the southeastern side of the base and is accessed from PR-107. The second entrance is located on the northeastern corner of the base. Because of the design and location of the main gate, traffic can back up slightly during peak travel times.

3.6.2.2 Air Transportation

The nearest airport is Rafael Hernández Airport, which has approximately 44 operations per day (both civilian and military). The airport provides flights to the U.S. mainland, other Caribbean locations, and South America.

3.6.3 Environmental Consequences

3.6.3.1 Significance Criteria

Effects on transportation and circulation would potentially be significant if the Proposed Action would create permanent road closures or widespread traffic congestion.

3.6.3.2 Preferred Alternative

Summary. Implementing the Preferred Alternative would have short-term less-than-significant adverse and long-term beneficial effects on transportation resources. Short-term effects would be caused by roadway work, worker commutes, and delivery of equipment and materials during construction, demolition, and renovation activities. Long-term beneficial effects would result from upgrades to the transportation infrastructure, the renovation of the existing main gate, and the repaving of the internal roads and parking lot. The Preferred Alternative would not create permanent road closures or widespread traffic congestion and would have no appreciable effect on transportation.

Construction. Implementing the Preferred Alternative would have short-term less-than-significant adverse effects on transportation and traffic. These effects would be primarily caused by worker commutes and delivery of equipment and materials to and from the proposed construction and demolition sites. Congestion might slightly increase in the immediate areas because of additional vehicles and traffic delays near the project sites. In addition, road closures or detours used to accommodate utility system work are not expected. If they became necessary, their effects would be temporary in nature and would end with completion of each construction or demolition project. The existing transportation infrastructure would be sufficient to support the increase in vehicle traffic.

Although the effects would be less than significant, contractors would route and schedule construction vehicles to minimize conflicts with other traffic and strategically locate staging areas to minimize traffic effects. All construction vehicles would be equipped with backing alarms, two-way radios, and Slow-Moving Vehicle signs when appropriate. The existing main gate would remain operational while repair work is under way. Temporary changes in traffic patterns to accommodate gate construction might continue to cause queuing at the existing gate and adjacent roadway. These effects would be temporary and would end with the construction phase.

For the Weapon System Facility (Project No. TKWR182304), contractors would route and schedule heavy equipment and other vehicles to minimize traffic delays and conflicts. The contractor would also strategically place staging areas to minimize effects during construction activities. All detours and temporary road closures would be posted with proper signage, if necessary.

Operations. The Preferred Alternative would have long-term beneficial effects on transportation resources. The effects would result from upgrades to transportation infrastructure, including the repair of the existing main gate and road and parking lot improvements. There would be no change in the number of personnel or the overall mission at the base. There would be no changes in commuter vehicle trips to and from the base. The reduction in congestion near the gate and

PR-107 would have an incremental beneficial effect on traffic. The renovated main gate would increase security-processing efficiency and reduce traffic at the entrance to PR-107. No additional traffic controls would be required, and traffic patterns would remain like existing conditions.

3.6.3.3 Weapon System Facility (Project No. 2) Alternative Sites 1 or 3

Effects from implementing Weapon System Facility Alternative Sites 1 or 3 would be similar to those under the Preferred Alternative.

3.6.3.4 Regulatory Requirements and BMPs

During construction, contractors would route and schedule heavy equipment and other vehicles to minimize traffic delays and conflicts and would strategically place staging areas to minimize effects. As necessary, all detours and temporary road closures would be posted with proper signage.

3.6.3.5 No Action Alternative

Adverse effects on transportation and circulation would be expected from the implementation of the No Action Alternative because the parking lots and roads would deteriorate further, and the main gate would remain non-compliant with DoD AT/FP requirements. Under the No Action Alternative, the proposed construction, demolition, and renovation projects would not occur.

3.7 WATER RESOURCES

3.7.1 Definition of Resource

Water resources include surface water, groundwater, wetlands, floodplains, coastal waters, and stormwater. *Groundwater* is water that exists in the saturated zone beneath the earth's surface and includes underground streams and aquifers. *Stormwater* is rain and snow melt that runs off surfaces such as rooftops, paved streets, parking lots, and other impervious surfaces. Surface water generally consists of lakes, rivers, and streams. *Wetlands* are identified as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. *Floodplains* are areas of low-level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation due to rain or melting snow. *Coastal waters* are waters included within a state's coastal zone under its coastal zone management plan.

3.7.2 Existing Conditions

Punta Borinquen GSU has no streams, ponds, wetlands, or other surface water features (including 100-year floodplain areas). The GSU is within the 3,280 feet (1,000 meters) delimitation established by the PR Coastal Zone Management Program (PRCZMP) (Figure 3-1). The

PRCZMP establishes a 1,000-meter-wide belt of coastal lands or additional distances needed to protect key coastal natural systems, the Territorial waters, and submerged lands beneath them. The PRCZMP extends 9 nautical miles offshore, as well as to the Vieques, Culebra, Mona islands, and all keys and islets within the PR jurisdiction.

3.7.2.1 Groundwater

Based on the PRPB Geographic Information System (GIS), Punta Borinquen GSU lies over the northwestern side of fissured aquifers, including karst and volcanic aquifers. The North Coast Limestone Aquifer is drained by eight major rivers that originate in the mountainous volcanic terrain to the south. The rivers flow predominantly north to the Atlantic Ocean. The potentiometric surface of the Upper Aquifer from Aguadilla to Camuy is generally less than 10 feet above mean sea level. Locally, this would place the depth to groundwater in the range of 100 to 400 feet (30.5 to 121.9 meters) below land surface.

3.7.2.2 Stormwater

The base's SWPPP is not associated with a USEPA NPDES Industrial Permit. Such a permit is not required at Punta Borinquen GSU because it is not an industrial activity as defined by stormwater regulations and Standard Industrial Classifications (SICs), which typically include airports as SIC Code 45–Air Transportation (Cardno 2014). Punta Borinquen GSU is not an airport and conducts no air transportation activities. Accordingly, compliance with the SWPPP is voluntary from a regulator's perspective but implemented within the NGB to comply with Air Force Manual 32-1067, Water and Fuel Systems.

Punta Borinquen GSU has two stormwater drainage areas (Figure 3-2). Stormwater from Drainage Area 001 flows into a series of curb inlets along the perimeter road of the facility or drop inlets located throughout the west side of the facility. Runoff for Drainage Area 001 includes the following: a 10,000-gallon diesel UST and a 3,000-gallon gasoline UST located at the fuel point and no longer used; the washback area; a 400-gallon used oil aboveground storage tank (AST) with secondary containment; a 500-gallon diesel AST with secondary containment; hazardous materials storage, including paints and refrigerants with built-in secondary containment; petroleum, oils, and lubricants storage inside the vehicle maintenance shop; and 27 diesel generators each with a 40-gallon capacity stored in a covered bay attached to the vehicle maintenance shop. Stormwater flows into drop inlets and is conveyed underground to the west and/or north, leading to a 24-inch reinforced concrete pipe that directs water to an upland stormwater swale on the undeveloped parcel of land. In addition, undeveloped land on the northwest portion of the property sends stormwater to an upland stormwater swale via surface flow due to the slope of the land. The drainage ditch has no discernible receiving water bodies between the site and the ocean.

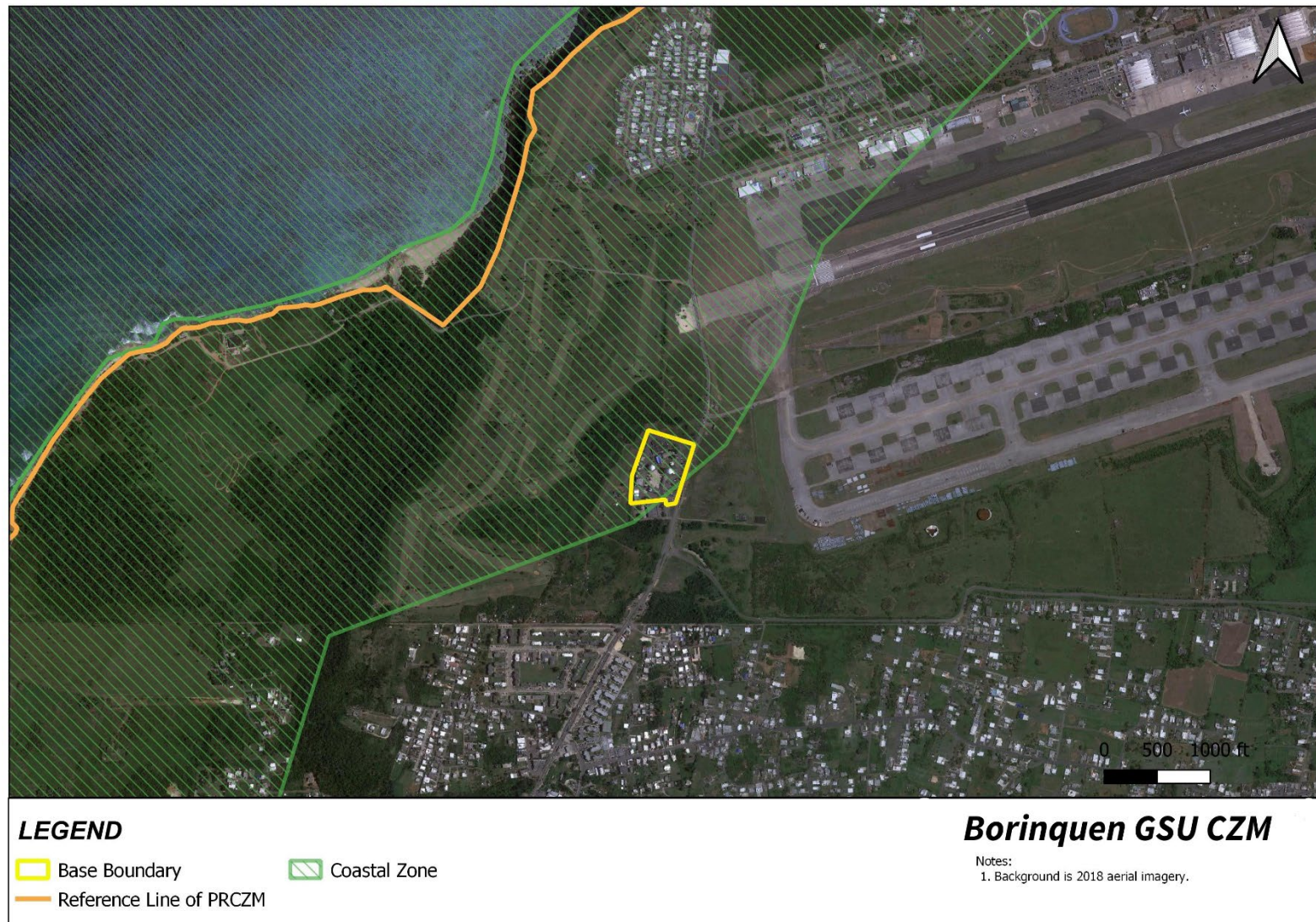


Figure 3-1. Coastal Zone Boundary Near Punta Borinquen GSU

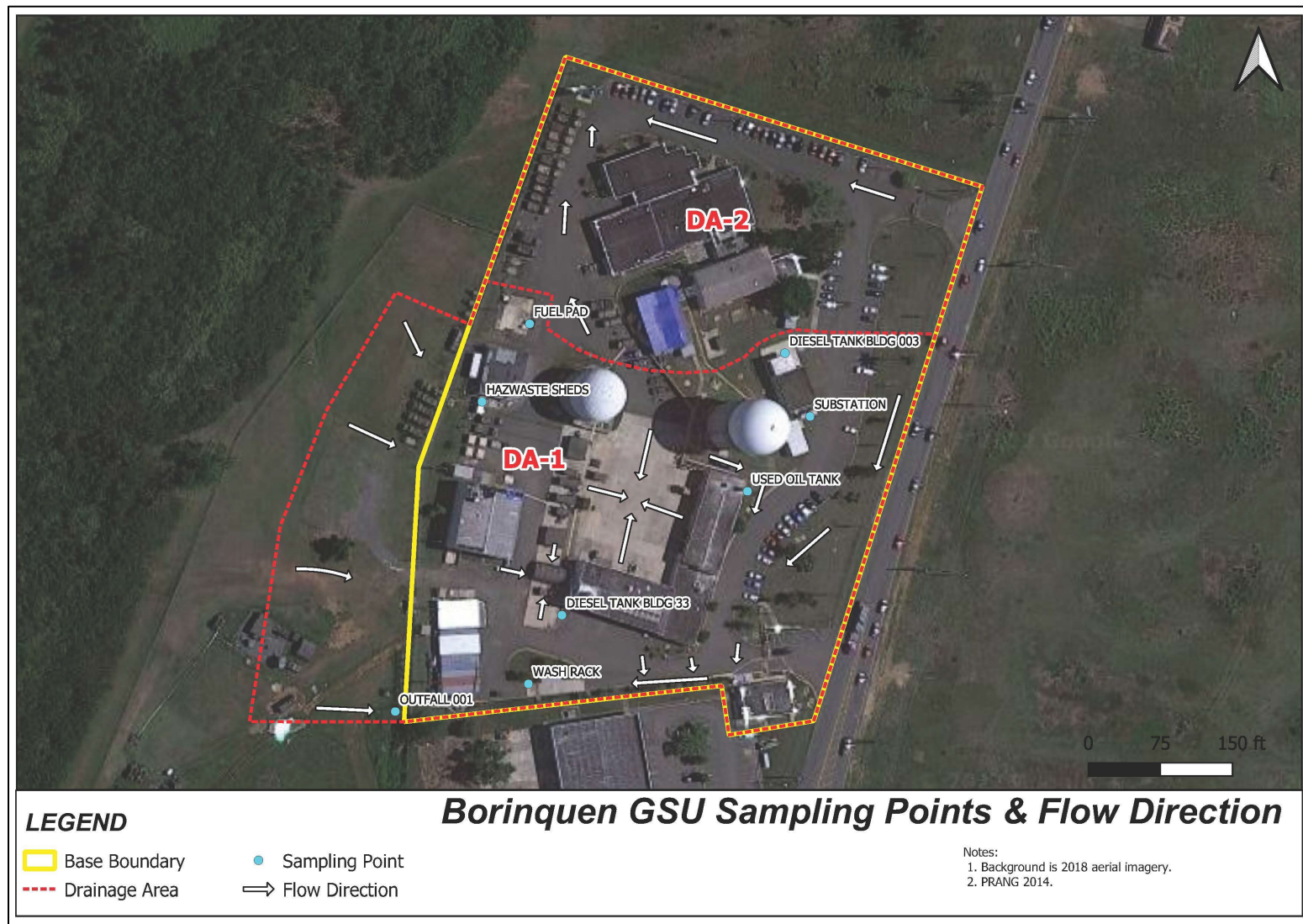


Figure 3-2. Sampling Points and Flow Direction

Drainage Area 002 encompasses the northern portion of the facility from which stormwater runs off as sheet flow to the northeast corner of the facility. The area drained by surface runoff for Drainage Area 002 includes the following: a 5,000-gallon diesel AST with secondary containment for emergency power; three 100-gallon diesel ASTs associated with emergency generators for emergency power; and a vehicle storage area for the 42 vehicles located at the facility. Sheet flow runoff discharges to a wooded area north of the property that separates the parcel from the Punta Borinquen Golf Club course. No discernible receiving water bodies are located between the site and the ocean.

3.7.3 Environmental Consequences

3.7.3.1 Significance Criteria

Effects on water resources would be considered significant if the proposed activities would reduce water availability or supply, exceed safe annual yield of water supplies, adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations.

3.7.3.2 Preferred Alternative

Summary. Short-term less-than-significant adverse effects and long-term beneficial effects on water resources would be expected from implementing the Preferred Alternative.

Construction. The removal of the USTs would decrease impervious area by 1,950 SF. Under the Preferred Alternative, the Weapon System Facility would be built at Alternative Site 2; there would be no increase in impervious surface because this area is already covered in concrete. Therefore, the Preferred Alternative would result in a decrease of approximately 1,950 SF of impervious area, resulting in long-term beneficial effects from the slight decrease in stormwater generation.

Construction activities (including grading and clearing) would result in ground surface disturbance and could cause soil erosion and subsequent transport of sediment via stormwater; however, excavation during construction would not reach the depth of groundwater. Therefore, groundwater would be unaffected by the proposed activities. To minimize potential impacts associated with stormwater runoff during construction, BMPs and standard erosion control measures (such as sandbags, silt fencing, earthen berms, tarps or water spraying for dust control, and soil stabilization) would be implemented, as necessary. The BMPs to be used would be detailed in an Erosion and Sedimentation Control Plan, as part of the Consolidated General Permit PRANG would obtain through the Puerto Rico Permit Management Office (PRPB, 2020). No effects on surface waters would be expected because there are no surface waters on or near the GSU.

Reroofing of Building 7 (after the Radar Dome is removed) and internal improvements to Building 1 would have no effect, because the activities would require no site preparation.

All construction projects would be checked for consistency with Puerto Rico Coastal Zone Management regulations and policies (Federal Consistency Determination provided in Appendix E). If required, PRANG would obtain a notice of CZMA consistency or a waiver of such notice from the PRPB for the proposed projects at Punta Borinquen GSU.

Operations. No effects on water resources would be expected from operations at Punta Borinquen GSU after implementing the Preferred Alternative. Once areas disturbed during construction have been stabilized, stormwater runoff and sedimentation would be expected to be no greater than they were before construction.

3.7.3.3 Weapon System Facility (Project No.2) Alternative Sites 1 or 3

Construction of the Weapon System Facility at Alternative Site 1 would add 2,100 SF of impervious area; however, removal of USTs would decrease the impervious area by 1,950 SF, resulting in a net increase of approximately 150 SF of impervious area. Therefore, there would be a slight increase in stormwater generation, resulting in long-term less than adverse effects.

Construction of Weapon System Facility at Alternative Site 3 would demolish 2,150 SF of Building 32 and, add approximately 2,100 SF impervious area. USTs removal would reduce 1,950 SF of impervious area. Therefore, overall, there would be approximately 2,000 SF decrease of impervious area, resulting in a decrease in stormwater generation.

No effects on water resources from operations are expected at either Alternative Site 1 or 3.

3.7.3.4 Regulatory Requirements and BMPs

The construction, demolition, and repair and renovation activities would not adversely affect water quality, damage or threaten hydrology, or violate water resources laws or regulations. Stormwater runoff from repaved parking lots would follow the existing drainage slopes. Stormwater inlets would be protected to avoid solid debris or sediments from entering.

It is anticipated that during the construction of the Preferred Alternative, short-term temporary effects would occur that would be minimized by using construction BMPs, timing restrictions, and proper equipment maintenance to reduce the potential effects. The contractor would provide all equipment and personnel necessary to comply with the environmental site-specific permit conditions, including but not limited to BMPs such as silt fences and straw bales installed along areas of potential surface water runoff.

Before starting construction, the contractor would obtain the corresponding Erosion Control and Sedimentation Plan and permit (a Consolidated General Permit through the Puerto Rico Permit Management Office) (PRPB, 2020).

3.7.3.5 No Action Alternative

No effects on water resources would result from implementing the No Action Alternative because existing conditions would remain unchanged.

3.8 CUMULATIVE EFFECTS

Cumulative effects analysis is required to assess the effects of the Proposed Action when combined with the effects of other past, present, and reasonably foreseeable future projects that would affect the same resource element(s), regardless of what entity is implementing the other project (s).

NGB reviewed the PRPB GIS to identify other past, present, and reasonably foreseeable projects in the area. The Puerto Rico Permit Management Office and the PRPB manage all planning and construction permits, and all the permits are georeferenced in the PRPB GIS.

Based on the PRPB GIS, NGB identified projects that could affect the same resource elements as the Proposed Action. The Puerto Rico Ports Authority (PRPA) operates the Rafael Hernández Airport. During 2021, rehabilitation projects for different facilities were approved for the Rafael Hernández Airport (Table 3-6). The projects would be under the jurisdiction of PRPA. While those projects are in the vicinity of the Proposed Action, they were scheduled for completion prior to the projects under the Proposed Action. Additionally, the PRPA would be required to comply with all applicable federal and commonwealth regulations, including complying with the Puerto Rico Environmental Policy Act or NEPA, as appropriate, on their projects.

All other projects outlined in the reviewed plans were either temporally or geographically remote and would not affect the same resources as the Proposed Action; therefore, none of the projects were carried forward for detailed evaluation in the EA.

Table 3-6. Projects Considered for Cumulative Effects

Property	Projects Identified	Implementation Timeline
Rafael Hernández Airport	<ul style="list-style-type: none">• New Hangar and Adm. Support Facility United States Custom and Border Protection• Repairs and Structural Improvements to Hangar 404 FedEx• Lufthansa Technik Puerto Rico 5-Bay Heavy Maintenance Facility Project	2015–2021

Property	Projects Identified	Implementation Timeline
University of Puerto Rico (UPR)– Aguadilla	<ul style="list-style-type: none">• Remodeling of the UPR–Aguadilla Old Library• Remodeling Distance Education Center• Expansion and Remodeling of the Athletic Center (Building 711)	2020–2022
Salvador Fuentes School	Construction of two bathrooms–Salvador Fuentes School	2019
Ramey Resort Inc.	Replacement of mini tower, mounts, and antennas in existing telecommunications facility	2019

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5.0 LIST OF PREPARERS

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Years of Experience: 24

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Appendix A
IICEP Correspondence

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Appendix A – Punta Borinquen GSU

The following letters were sent to the federal, commonwealth, and municipal agencies listed below. A complete correspondence package, with the attachment, is shown only for the first letter. Additional letters are included only if the content is different from the first letter.

Responses received are marked in the table below and included in the appendix.

Organization	Name	Address	Response Received
Federal			
U.S. Army Corps of Engineers Jacksonville District - Antilles Office	Sir/Madam	Annex Building, Ste. 202 Franklin Delano Roosevelt Av. #383 San Juan, PR 00918	X
U.S. Department of Agriculture Rural Development	Mr. Luis R. García Acting State Director	EDIF 654 Plaza Suite 601 654 Ave. Munoz Rivera San Juan, PR 00918-4129	
U.S. Fish and Wildlife Service Southeast Region	Mr. Edwin E. Muñiz Field Supervisor	P.O. Box 510 Boqueron, PR 00622-0510	X
NOAA, National Marine Fisheries Service Habitat Conservation Division/Atlantic & Caribbean Branch	Mr. Pace Wilber Chief	263 13th Avenue South St. Petersburg, FL 33701	X
USEPA Region 2 Caribbean Environmental Protection Division	Ms. Carmen Guerrero Director	City View Plaza II – Suite 7000 #48 Rd. 165 km 1.2 Guaynabo, PR 00968-8069	
Commonwealth			
Departamento de Recurso Naturales y Ambientales	Mr. Rafael Machargo Secretary	San Jose Industrial Park 1375 Ave. Ponce de Leon San Juan, PR 00926	
Departamento de Salud	Mr. Carlos Mellado Secretary	PO Box 70184 San Juan, PR 00936-0184	
Instituto de Cultura Puertorriqueña	Prof. Carlos R. Ruíz-Cortés Executive Director	Apartado Postal 9024184 San Juan, PR 00902-4184	
State Historic Preservation Office	Mr. Carlos A. Rubio Cancela Executive Director	PO Box 9023935 San Juan, PR 00902-3935	X
Puerto Rico Aqueducts and Sewer Authority	Eng. Doriel I. Pagan Crespo Executive Director	PO Box 7066 San Juan, PR 00916-7066	
Puerto Rico Electric and Power Authority	Eng. Josue Colon Executive Director	Box 364267 San Juan, PR 00936-4267	
Permit Management Office	Eng. Gabriel Hernandez Deputy Secretary	PO Box 41179 San Juan, PR 00940-1119	
Puerto Rico Planning Board	Plan. Manuel Hidalgo President	PO Box 41119 San Juan, PR 00940-1119	
Department of Transportation and Public Works	Eng. Eileen M. Velez Vega Secretary	Box 41269 Minillas Station San Juan, PR 00940-1269	
Municipal			
Municipality of Aguadilla	Mr. Julio Roldan Mayor	P.O. Box 1008 Aguadilla, PR 00605-1008	X

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NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157

12 November 2021

Ms. Christine Yott
NEPA Program Manager
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Ave
Joint Base Andrews MD 20762-5157

Sir/Madam
U.S. Army Corps of Engineers
Jacksonville District - Antilles Office
Annex Building, Ste. 202
Franklin Delano Roosevelt Av. #383
San Juan PR 00918

Dear Sir/Madam

The National Guard Bureau (NGB) is proposing a series of construction, demolition, and renovation projects at the Punta Borinquen Geographically Separated Unit (GSU) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, PR (**Attachment 1**). The projects would provide the 141st Air Control Squadron (141 ACS) with adequate space and facilities to accomplish its mission as a Control and Reporting Center of the Air Combat Command. The proposed projects would demolish, renovate, or replace outdated facilities and ensure compliance with antiterrorism/force protection requirements (**Attachment 2**). As directed by the National Environmental Policy Act (NEPA), the NGB, with support from Tetra Tech, Inc., is preparing an environmental assessment (EA) to evaluate the potential environmental effects associated with the Proposed Action.

The Area of Potential Effects (APE) (**Attachment 3**) for the Proposed Action is defined as any area where ground disturbance will occur; this includes the staging areas for equipment and materials. As noted in the project list, "Construct Weapon System Facility (TKWR182304)" is the only construction project with alternative locations that will be evaluated in the upcoming EA (**Attachment 2**).

The NGB is interested in information or agency-specific preliminary comments that would alleviate or highlight areas of concerns preceding this EA. Areas of concern may include potential effects on physical, ecological, social, cultural, and archaeological resources. The NGB also requests any information that your agency may have regarding other proposed, ongoing, or recently completed projects that could create or exacerbate impacts on the Proposed Action.

Please respond within 30 days of receipt either by U.S. Postal Service to Christine Yott, NEPA Program Manager, ATTN: Punta Borinquen EA, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject titled as ATTN: Punta Borinquen EA. Thank you for your assistance.

Sincerely

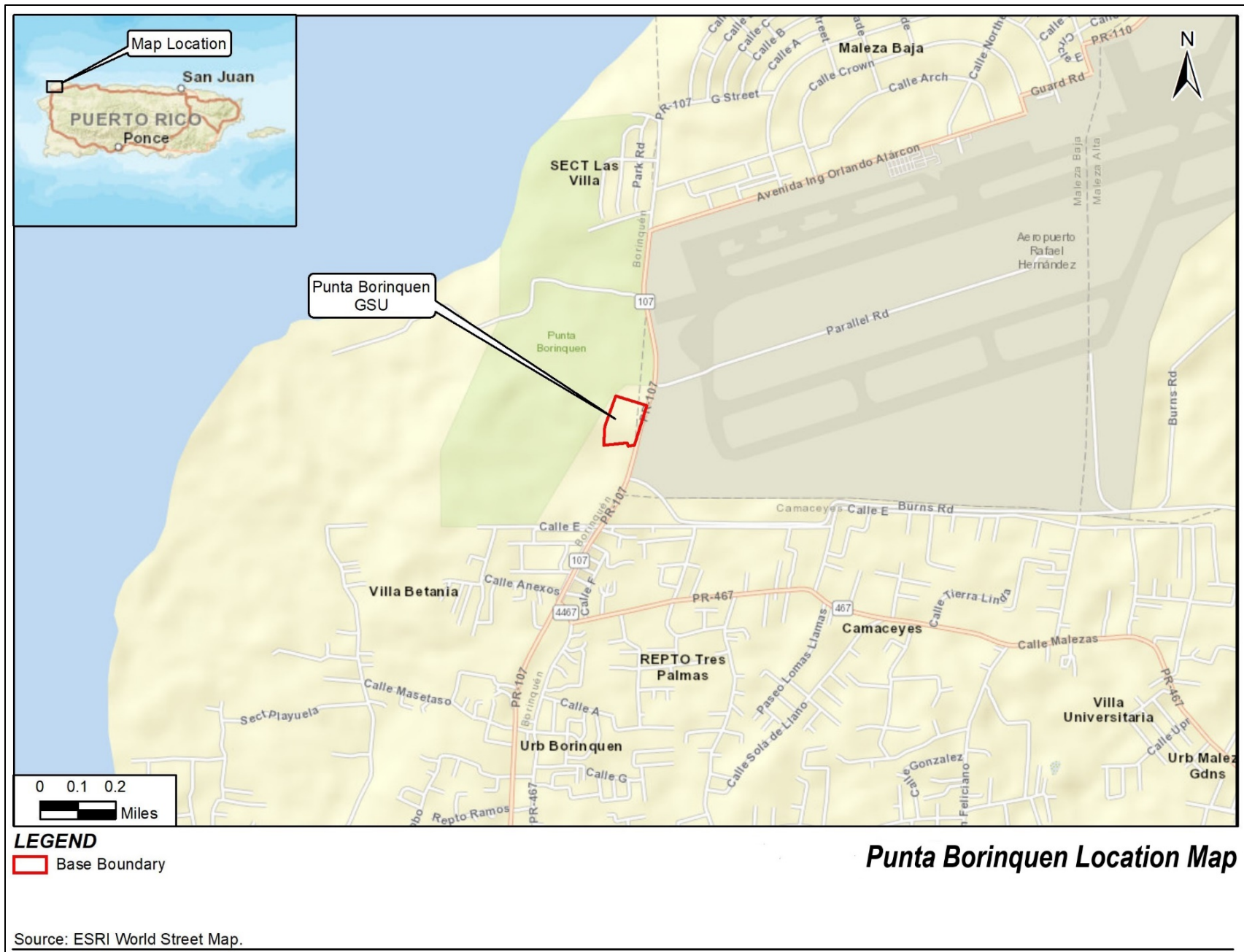
YOTT.CHRI
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CHRISTINE J. YOTT, GS-13, DAF
NEPA Program Manager

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Date: 2021.11.12
12:28:51 -05'00'

3 Attachments:

1. Punta Borinquen Location Map, 05 November 2021
2. Punta Borinquen Project List, 05 November 2021
3. Punta Borinquen Area of Potential Effects, 05 November 2021

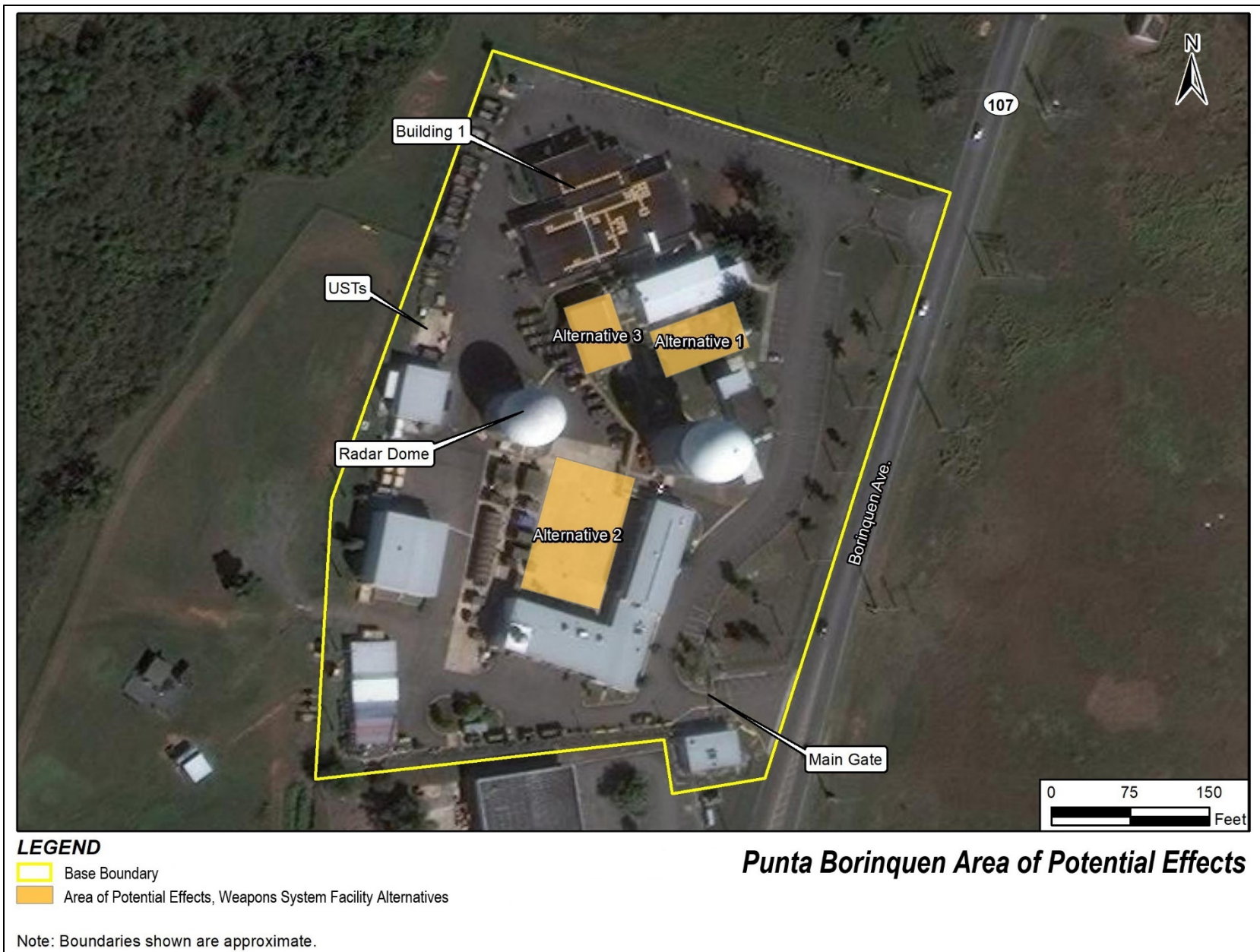
Attachment 1: Punta Borinquen Location Map



Attachment 2: Punta Borinquen Project List

Project Number	Projects Description	Project ID	Estimated Year
1	Remove Underground Storage Tanks (USTs). This project would remove the 1,950 square feet (SF) (181 square meter [SM]) concrete pad covering two USTs (a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank) northeast of Building 11.	TKWR212302	2022
2	Construct Weapon System Facility. This project would construct a 2,100 SF (195 SM) facility behind Building 33. There are three alternative sites for this project: Alternative Site 1 – south of Building 1, Alternative Site 2 (Preferred) – behind Building 33; and Alternative Site 3 – southwest of Building 1.	TKWR182304	2023
3	Upgrade Main Gate. This project would replace the motor that controls opening and closing of the main gate.	TKWR222302	2023
4	Renovate Main Building (Building 1). This project would renovate Building 1 by replacing ceiling tiles, doors, floors, and walls, repainting, and making other cosmetic repairs.	TKWR222301	2023
5	Repair and Reseal Parking Lots and Roads. This project would repair select roads and parking lots on Punta Borinquen AGS. This project would repair or reseal a total of approximately 3,200 SF (297 SM) of surface.	TKWR222303	2022
6	Remove Radar Dome and Reroof Building 7. This project would remove the radar dome and construct a new roof on Building 7.	TKWR232301	2024

Attachment 3: Punta Borinquen Area of Potential Effects



From: [Ramos-Villanueva, Marielys CIV USARMY CESAJ \(USA\)](#)
To: [NGB A4/A4A NEPA COMMENTS Org](#)
Subject: RE: Scoping Letter for Punta Borinquen GSU of the PRANG
Date: Wednesday, April 27, 2022 10:38:18 PM

Dear Ms. Yott,

I hope this email finds you well and in good health.

First, I would like to apologize for my late response. I thought I had answered you already after discussing your questions with my supervisor.

The mission of the U.S. Army Corps of Engineers (Corps) regulates activities in our nation's waters through a permit program based primarily on two federal laws. Under Section 10 of the Rivers and Harbors Act, a permit from the Corps is required for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403; "Section 10"). Under Section 404 of the Clean Water Act, a permit from the Corps is required for discharges of dredged or fill material into all waters of the U.S., including wetlands, streams, lakes, and marine waters (33 U.S.C. 1344; "Section 404"). We have geographic jurisdiction over most streams in Puerto Rico. Our line of jurisdiction under Section 404 of the Clean Water Act is the Ordinary High Water Mark (OHWM).

A search in our database shows that there have been two prior evaluations for permits in the location you provided. The information I found is the following:

Case Number: SAJ-2010-01427

- No Permit Required (NPR) – Construction and renovation activities would be limited to the current building footprint.

Case Number: SAJ-2018-03019

- No Permit Required (NPR) – There are no details about the proposed activities, but it is at the same location of the case above and that you provided.

The National Wetland Inventory does not show any wetlands or water bodies at the location you provided or surrounding areas. If there are any proposed activities that include the discharge of dredged or fill material at or nearby wetlands or waterbodies, please provide the limits of the proposed project site to confirm if there is any area within that falls under our jurisdiction under Section 404 of the Clean Water Act.

Please, let me know if you have any questions or comments, either by email or by phone at (787) 379-4293.

Regards,

Marielys Ramos-Villanueva
Project Manager, Environmental Engineer
USACE Antilles Regulatory Program
Cell: (787) 379-4293

From: Ceden-Maldonado, Deborah J CIV USARMY CESAJ (USA) <Deborah.J.Ceden-Maldonado@usace.army.mil>

Sent: Monday, November 22, 2021 11:35 AM

To: NGB A4/A4A NEPA COMMENTS Org <NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil>

Cc: Roman, Carmen G CIV USARMY CESAJ (USA) <Carmen.G.Roman@usace.army.mil>; Ramos-Villanueva, Marielys CIV USARMY CESAJ (USA) <Marielys.Ramos-Villanueva@usace.army.mil>


Subject: RE: Scoping Letter for Punta Borinquen GSU of the PRANG

Dear Ms. Yott:

Thanks for submitting the letter requesting comments from the U.S. Army Corps of Engineers regarding the subject project.

Please be aware that Ms. Marielys Ramos-Villanueva, who I am copying in this email for her situational awareness, is the project manager responsible for the evaluation of proposed projects in the Municipality of Aguadilla.

Cordially,

Deborah J. Cedeño-Maldonado
Project Manager
U.S. Army Corps of Engineers
Jacksonville District
Antilles Regulatory Section
Fund. Ángel Ramos Annex Bldg., Suite 202
383 F.D. Roosevelt Ave.
San Juan, Puerto Rico 00918
 787-289-7036

From: NGB A4/A4A NEPA COMMENTS Org <NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil>

Sent: Monday, November 22, 2021 11:24 AM

To: Roman, Carmen G CIV USARMY CESAJ (USA) <Carmen.G.Roman@usace.army.mil>; Ceden-Maldonado, Deborah J CIV USARMY CESAJ (USA) <Deborah.J.Ceden-Maldonado@usace.army.mil>

Subject: Scoping Letter for Punta Borinquen GSU of the PRANG

Good Morning,

The Air National Guard is seeking information or preliminary concerns regarding projects associated with an upcoming Environmental Assessment at our GSU in Punta Borinquen, PR. Please see the attachments for more information.

Respectfully,

CHRISTINE J. YOTT, GS-13, DAF
NEPA Program Manager
Air National Guard Readiness Center
3501 Fetchet Avenue
Joint Base Andrews, MD 20762

OSTER, GWEN E CTR USAF ANG NGB/A4

From: Pace Wilber - NOAA Federal <pace.wilber@noaa.gov>
Sent: Monday, December 13, 2021 9:43 PM
To: NGB A4/A4A NEPA COMMENTS Org
Cc: Jocelyn Karazsia - NOAA Federal; Jose Rivera
Subject: [Non-DoD Source] ATTN: Punta Borinquen EA

Hello Christine.

NOAA's National Marine Fisheries Service (NMFS) reviewed the scoping letter, dated 12 November 2021, describing various construction, demolition, and renovation projects at Punta Borinquen in Aguadilla, Puerto Rico. Punta Borinquen is a Geographically Separated Unit of the Puerto Rico Air National Guard. Based on the letter, its attachments, and publicly available aerial images of the location, it does not appear the National Guard Bureau (NGB) is proposing work within tidal waters; however, tidal waters are within the vicinity of some work areas. Accordingly, the NMFS recommends the NGB employ standard best management practices during construction to limit runoff into tidal waters from the construction sites, including areas used to stage construction equipment and materials. These best management practices may include using staked silt fences, staked hay bales, coir logs, or similar devices to prevent sediment-laden runoff from entering tidal waters. If the NGB believes construction activities will adversely affect habitats within tidal waters, an essential fish habitat (EFH) assessment under the Magnuson-Stevens Fishery Conservation and Management Act may be needed. Before preparing the assessment, the NMFS recommends NGB consult with the U.S. Army Corps of Engineers (USACE), Antilles Office, to determine how the USACE may authorize the proposed work. If the USACE uses a Nationwide Permit, the USACE may determine a project-specific EFH consultation is not needed due to the coordination that occurred between the USACE and NMFS when the recent set of Nationwide Permit was issued. If it is determined an EFH assessment is needed, 50 CFR 600.920(e)(3) describes the required components, namely (i) a description of the action, (ii) an analysis of the potential adverse effects of the action on EFH and the managed species, (iii) the Federal agency's conclusions regarding the effects of the action on EFH, and (iv) proposed mitigation, if applicable. If needed, the NMFS can assist the NGB with preparation of the EFH assessment. If further assistance is needed, please contact me (Pace.Wilber@noaa.gov) or Jose Rivera (Jose.A.Rivera@noaa.gov).

Pace Wilber
Acting Assistant Regional Administrator
Habitat Conservation Division
NOAA Fisheries Service
331 Ft Johnson Road
Charleston, SC 29412

On Wed, Nov 17, 2021 at 12:24 PM NGB A4/A4A NEPA COMMENTS Org
<NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil> wrote:

Good Afternoon,

The Air National Guard is seeking information or preliminary concerns regarding projects associated with an upcoming Environmental Assessment at our base in Punta Borinquen, PR. Please see the attachment for more information.

Respectfully,

CHRISTINE J YOTT, M.S., GS-13, DAF

NEPA Program Manager

Air National Guard Readiness Center

3501 Fetchet Avenue

Joint Base Andrews, MD 20762

--

Pace Wilber, Ph.D.
Acting Assistant Regional Administrator
Habitat Conservation Division
NOAA Fisheries Service
331 Ft Johnson Road
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843-460-9926 (O)
843-568-4184 (NOAA Cell)
Pace.Wilber@noaa.gov



NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157



Based on the information provided and currently available to us, no federally listed, proposed species or designated critical habitat are known to exist within the project area. No further consultation pursuant section 7 of Endangered Species Act of 1973, as amended is needed.

Reviewer **FELIX LOPEZ** Digitally signed by FELIX LOPEZ
Date: 2022.01.04 11:58:08 -04'00'

EDWIN MUNIZ Digitally signed by EDWIN MUNIZ
Date: 2022.01.04 13:13:55 -04'00'
Caribbean ES Field Supervisor

12 November 2021

Ms. Christine Yott
NEPA Program Manager
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Ave
Joint Base Andrews MD 20762-5157

Sir/Madam
U.S. Fish and Wildlife Service
Southeast Region
P.O. Box 510
Boqueron PR 00622-0510

Dear Sir/Madam

The National Guard Bureau (NGB) is proposing a series of construction, demolition, and renovation projects at the Punta Borinquen Geographically Separated Unit (GSU) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, PR (**Attachment 1**). The projects would provide the 141st Air Control Squadron (141 ACS) with adequate space and facilities to accomplish its mission as a Control and Reporting Center of the Air Combat Command. The proposed projects would demolish, renovate, or replace outdated facilities and ensure compliance with antiterrorism/force protection requirements (**Attachment 2**). As directed by the National Environmental Policy Act (NEPA), the NGB, with support from Tetra Tech, Inc., is preparing an environmental assessment (EA) to evaluate the potential environmental effects associated with the Proposed Action.

The Area of Potential Effects (APE) (**Attachment 3**) for the Proposed Action is defined as any area where ground disturbance will occur; this includes the staging areas for equipment and materials. As noted in the project list, "Construct Weapon System Facility (TKWR182304)" is the only construction project with alternative locations that will be evaluated in the upcoming EA (**Attachment 2**).

The NGB is interested in information or agency-specific preliminary comments that would alleviate or highlight areas of concerns preceding this EA. Areas of concern may include potential effects on physical, ecological, social, cultural, and archaeological resources. The NGB also requests any information that your agency may have regarding other proposed, ongoing, or recently completed projects that could create or exacerbate impacts on the Proposed Action.

Please respond within 30 days of receipt either by U.S. Postal Service to Christine Yott, NEPA Program Manager, ATTN: Punta Borinquen EA, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157 or by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject titled as ATTN: Punta Borinquen EA. Thank you for your assistance.

Sincerely

YOTT.CHRI
STINE.JUNE
.1287505015
CHRISTINE J. YOTT, GS-13, DAF
NEPA Program Manager

Digitally signed by
YOTT.CHRISTINE.JU
NE.1287505015
Date: 2021.11.12
12:28:51 -05'00'

3 Attachments:

1. Punta Borinquen Location Map, 05 November 2021
2. Punta Borinquen Project List, 05 November 2021
3. Punta Borinquen Area of Potential Effects, 05 November 2021



December 7, 2021

Ms. Christine Yott
NEPA Program Manager
Air National Guard Readiness Center, NGB/A4AM
3501 Fetchet Ave
Joint Base Andrews, MD 20762-5157

Re: Comments Regarding Construction, Demolition, and Renovation Projects at Punta Borinquen Geographically Separated Unit of the Puerto Rico Air National Guard, Aguadilla, Puerto Rico

Via e-mail (NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil)

Dear Ms. Yott:

In response to your 12 November 2021 letter requesting the Municipality of Aguadilla comments to the proposed National Guard Bureau (NGB) proposed construction, demolition, and renovation at the Punta Borinquen Geographically Separated Unit (GSU) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, Puerto Rico. We have reviewed our system files and there are currently no proposed or active construction projects or developments within a 400-meter radius of the Punta Borinquen renovation project. If any new project were to be developed within the limits of any federal property, they will comply with requirements of Section 2.5.2.4 of the Puerto Rico Planning Board 2020 Joint Regulation¹.

The Municipality does not oppose and endorse the proposed action by the PRANG at Punta Borinquen, Aguadilla. If you have any additional questions, you may contact the undersigned via email at inieves@miaguadilla.com.

Sincerely,

Isabel Nieves, PPL
Director
Office of Land Use and Urbanism
Municipality of Aguadilla

REGLAMENTO CONJUNTO 2020. REGLAMENTO CONJUNTO PARA LA EVALUACION Y EXPEDICION DE PERMISOS RELACIONADOS AL DESARROLLO, USO DE TERRENOS Y OPERACION DE NEGOCIOS.

9233

02-Dec-2020

¹ Junta de Planificación de Puerto Rico, Reglamento 9233 (Reglamento Conjunto 2020. Reglamento Conjunto para la Evaluación y Expedición de Permisos Relacionados al Desarrollo, Uso de Terrenos y Operación de Negocios.) 02 de diciembre de 2020.



NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS 20762-5157

12 November 2021

Ms Jennifer Harty
Cultural Resources Program Manager (A4VN)
3501 Fetchet Ave
Joint Base Andrews MD 20762

Dr Nancy Santiago, Director
Instituto de Cultura Puertorriqueña
Box 9024184
San Juan Puerto Rico 00902-4184

Dear Dr Santiago

The National Guard Bureau (NGB) is proposing a series of construction, demolition, and renovation projects at Punta Borinquen, a Geographically Separated Unit (GSU) of the Puerto Rico Air National Guard (PRANG) in Aguadilla, PR (**Attachment 1**). The projects would provide the 141st Air Control Squadron (141 ACS) with adequate space and facilities to accomplish its mission as a Control and Reporting Center of the Air Combat Command. The proposed projects would demolish, renovate, or replace outdated facilities and ensure compliance with antiterrorism/force protection requirements (**Attachment 2**). NGB is preparing an environmental assessment (EA) to evaluate the potential environmental effects associated with the proposed projects. The purpose of this letter is to initiate consultation under Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108).

NGB has reviewed the undertaking and defined the area of potential effects (APE) as staging areas, areas of proposed ground disturbance, and facilities that would be renovated (**Attachment 3**).

In June 1990, PEER Consultants conducted a cultural resources study at the Punta Borinquen GSU. The study included both architectural and archaeological surveys. In a letter dated 23 May 2000, the Puerto Rico State Historic Preservation Office (SHPO) concurred that none of the architectural structures and buildings were eligible for inclusion in the National Register of Historic Places (NRHP), but requested additional information regarding the archaeological portion of the study. PEER Consultations provided SHPO an addendum to the archaeological sections in October 2000. SHPO did not provide comments to the archaeological addendum; therefore, NGB assumed concurrence with PEER's recommendation that no intact archaeological resources are present at Punta Borinquen GSU.

In 2020, Brockington and Associates, Inc. completed an update to the previous architectural inventories conducted at Muñiz Air National Guard Base (ANGB), Punta Salinas GSU, and Punta Borinquen GSU. In a letter dated 8 April 2021, the PR SHPO concurred with NGB that there are no historic properties present at Punta Borinquen GSU.

In October 2021, Sharon Meléndez Ortiz conducted a review of the archaeological site files and the NRHP files for an area defined by a one-mile radius around the facility. One NRHP-eligible archaeological site, two NRHP-listed lighthouses, one NRHP-eligible water canal, and one NRHP-eligible historic district are within the one-mile radius. The nearest of these is 0.6 miles from the Punta Borinquen GSU.

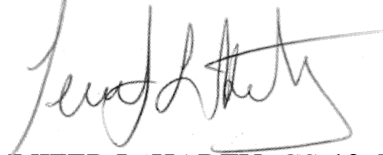
Name	ID #	General Location Relative to Undertaking	Description	NRHP
Borinquen / Aguadilla 1	AL0100001 / AG-1	0.95 mile west	Pre-Columbian site studied by Irving Rouse in 1937. Described as a single circular shell deposit surrounded by a refuse area with no shell and bordered southeast by scattered potsherds. Materials encountered include shell, ceramics, some Cuevas style, charcoal, and animal bones. An excavation conducted in 2002 by Meléndez Maíz and Rivera Collazo also identified Ostiones and Capá style ceramics, lithic fragments, a petaloid axe and shell and coral artifacts.	Eligible
Antiguo Faro Español	AL0100005	0.85 mile west	Lighthouse built in 1889 as part of the Puerto Rico Lighthouse system. The Neoclassic-style lighthouse, octagonal in shape, and the house, were built in stone and brick masonry. The lighthouse was destroyed in 1918 by an earthquake. The ruins remain in place.	Listed
Faro de Punta Borinquen	AL0200001 / AG-4	0.85 mile north	Lighthouse built by the U.S. Coast Guard in 1922. The tower, cylindrical with a mechanized lantern, was built separately from the dwelling. Many of the decorative details of the old Spanish Neoclassic-style lighthouse were reproduced.	Listed
Canal de Aguadilla	AL0200011	0.75 mile south	20th Century water canal.	Eligible
Ramey Air Force Base	--	0.6 mile northeast	Historic district first known as Borinquen Field. USA Air Force base active between 1936- and 1973.	Eligible

Several surveys have been completed within a one-mile radius. Projects with negative results included Cashion Lugo (1993), Questell (2006), Alemán Crespo (1987), and Louis Berger and Associates (1989, 1990). Rodriguez (1984) recorded precolonial pottery, but no site number was assigned. In the follow-up project, Rodriguez (1985) reported negative results. Rouse (1952) recorded the site Borinquen (AL0100001), and the site was revisited by Meléndez Maíz & Rivera Collazo (2002). Rigua (2010) recorded the Canal de Aguadilla, and Ayes Suárez (1991) recorded sites AL010001 and AL0100005.

Because there are no historic properties present at the Punta Borinquen GSU, and because the proposed undertaking will not adversely affect the sites and historic resources within a one-mile radius, the NGB has reached a determination of No Historic Properties Affected for the proposed undertaking. In accordance with § 800.3(c)4, the NGB invites you to comment on our proposed undertaking and effects determination. In order to adequately consider your comments, please respond within 30 days of receipt of this letter. In addition to your office, the NGB is consulting with the Puerto Rico State Historic Preservation Office.

Please provide comments to Jennifer Harty, Cultural Resources Program Manager (A4), by email at NGB.A4.A4A.NEPA.COMMENTS.Org@us.af.mil with the subject line ATTN: Punta Borinquen GSU EA. Thank you for your assistance.

Sincerely



JENNIFER L. HARTY, GS-13, DAF
Cultural Resources Program Manager

Three attachments:

1. Location Map, 05 November 2021
2. Project List, 05 November 2021
3. Area of Potential Effects, 05 November 2021

Available upon request:

Final Phase I Archaeological and Architectural Evaluation of the Punta Borinquen Air National Guard Station, Punta Borinquen, Aguadilla Municipio, Puerto Rico. PEER Consultants, 2000.

Addendum to the Phase I Archaeological and Architectural Evaluation of the Punta Borinquen Air National Guard Station, Punta Borinquen, Aguadilla Municipio, Puerto Rico. PEER Consultants, 2000.

Architectural Evaluation of Buildings at Three Air National Guard Installations in Puerto Rico: Munoz ANGB, Punta Salinas ANG, and Punta Borinquen ANG, Puerto Rico. Brockington and Associates, 2020.



GOVERNMENT OF PUERTO RICO
STATE HISTORIC PRESERVATION OFFICE

Executive Director | Carlos A. Rubio-Cancela | carubio@prshpo.pr.gov

Wednesday, December 22, 2021

Jennifer L. Harty, GS-13, DAF

Cultural Resources Program Manager
National Guard Bureau
3501 Fetchet Avenue
Joint Base Andrews, 20762-5157

SHPO: 03-05-21-04 ARCHITECTURAL EVALUATION OF BUILDINGS AT THREE
AIR NATIONAL GUARD INSTALLATION IN PUERTO RICO: MUÑIZ ANG, PUNTA
SALINAS ANG, PUNTA BORINQUEN ANG, ISLANDWIDE, PUERTO RICO

Dear Commander Harty,

We acknowledge the receipt of your letters dated November 12, 2021 to initiate consultation for the proposed undertakings to be carried out in Punta Salinas ANG in Toa Baja and Punta Borinquen ANG in Aguadilla. This, in accordance with 54 USC 306102, (commonly known as Section 110 of the National Historic Preservation Act, as amended). The State Historic Preservation Officer (SHPO) is to advise and assist federal agencies and other responsible entities when identifying historic properties, assessing effects upon them, and considering alternatives to avoid or reduce the project's effects.

In regards to Punta Salinas ANG, proposed renovation of the Combat Arms Training and Maintenance Bunker (project number TVAD212203), the SHPO would have to review it individually for its potential impact to Building 9, a property found eligible in 2020. The mitigation of adverse effects that will result from the radar and dome removal (project number TVAD212204) is already under way. As previously stated to the Puerto Rico Air National Guard (PRANG), we do not agree with the 2020 inventory determination that Punta Salinas ANG is not a potential historic district. Finally, once completed, we look forward to receive and review the environmental assessment prior to the implementation of any listed project.



SHPO: 03-05-21-04 ARCHITECTURAL EVALUATION OF BUILDINGS AT THREE AIR
NATIONAL GUARD INSTALLATION IN PUERTO RICO: MUÑIZ ANG, PUNTA SALINAS
ANGS, PUNTA BORINQUEN ANG, ISLANDWIDE, PUERTO RICO

Regarding Punta Borinquen ANG, we agree with your determination of
"no historic properties affected" within the proposed undertakings' Area
of Potential Effects.

If you have any questions or comments regarding this matter or require
our further assistance, do not hesitate to contact our Office.

Sincerely,



Carlos A. Rubio-Cancela
State Historic Preservation Officer

CARC/GMO/SG



Appendix B

Notice of Availability

(NOTE: To be provided after NOA is published)

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Appendix C
Air Conformity Applicability Model Results

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**PREFERRED ALTERNATIVE
AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)**

AIR CONFORMITY APPLICABILITY MODEL REPORT

RECORD OF AIR ANALYSIS (ROAA)

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

a. Action Location:

Base: PUNTA BORINQUEN RADAR SITE
State: Puerto Rico
County(s): Aguadilla
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: ENVIRONMENTAL ASSESSMENT OF SHORT-TERM CONSTRUCTION AT PUNTA BORINQUEN GEOGRAPHICALLY SEPARATED UNIT AGUADILLA, PUERTO RICO

c. Project Number/s (if applicable): Contract No.: W91278-19-D-0031-0006, Project Nos.: ANG16050120A, SPBN157000, UWDE117065

d. Projected Action Start Date: 1 / 2023

e. Action Description:

Under the Proposed Action, the 141 ACS would implement construction, demolition, repair, and renovation projects at Punta Borinquen GSU, as described in Table 2-1 at the locations shown in Figure 2-1. Appendix C provides photos of project locations. The Proposed Action is the 141 ACS's Preferred Alternative. Operations at Punta Borinquen GSU would not appreciably change and no new permanent jobs would be created from implementing the Proposed Action. This section discusses the proposed projects.

One project involves new construction, which would add approximately 2,100 SF (195 square meters [SM]) of new building and impervious surface, and one project involves facility demolition. The construction project, identified by its ANG project number, would be implemented on previously disturbed land. The demolition project involves removing underground storage tanks (USTs) and an associated fuel pump and concrete pad.

- Construct Weapon System Facility (TKWR182304) (Fiscal Year 2022 [FY22]). This project constructs an approximately 2,100-SF weapons system facility.
- Remove USTs (TKWR212302) (FY21). This project involves removing a concrete pad, a fuel pump, and two USTs.

Renovation and Infrastructure Repair Projects

Four projects involve renovation or infrastructure repair:

- Upgrade Main Gate (TKWR222302) (FY22). This project involves reconstructing the gate facility to comply with AT/FP requirements.
- Remove Radar Dome and Reroof Building 7 (TKWR232301) (FY23). This project involves removing the radar dome on Building 7 and replacing it with a new roof.
- Renovate Main Building (Building 1) (TKWR222301) (FY22). This project involves making safety and cosmetic renovations to Building 1.
- Repair and Reseal Parking Lots and Roads (TKWR222303) (FY22). This project involves repairing approximately 3,200 SF of deteriorated pavement on the base.

f. Point of Contact:

Name: Jonas Berge
Title: Air Quality Scientist
Organization: Tetra Tech
Email: jonas.berge@tetrattech.com
Phone Number: 4146403487

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

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

_____ applicable
☒ not applicable

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

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

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

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.459	250	No
NOx	3.291	250	No
CO	5.209	250	No
SOx	0.010	250	No
PM 10	0.345	250	No
PM 2.5	0.138	250	No
Pb	0.000	25	No
NH3	0.012	250	No
CO2e	916.1		

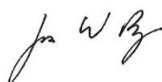
2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.209	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No

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

PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No
CO2e	0.0		

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



Jonas Berge, Air Quality Scientist

20 April 2022

DATE

**WEAPON SYSTEM FACILITY – ALTERNATIVE 3
AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)**

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

a. Action Location:

Base: PUNTA BORINQUEN RADAR SITE
State: Puerto Rico
County(s): Aguadilla
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: ENVIRONMENTAL ASSESSMENT OF SHORT-TERM CONSTRUCTION AT PUNTA BORINQUEN GEOGRAPHICALLY SEPARATED UNIT AGUADILLA, PUERTO RICO

c. Project Number/s (if applicable): Contract No.: W91278-19-D-0031-0006, Project Nos.: ANG16050120A, SPBN157000, UWDE117065

d. Projected Action Start Date: 1 / 2023

e. Action Description:

Under the Proposed Action, the 141 ACS would implement construction, demolition, repair, and renovation projects at Punta Borinquen GSU, as described in Table 2-1 at the locations shown in Figure 2-1. Appendix C provides photos of project locations. The Proposed Action is the 141 ACS's Preferred Alternative. Operations at Punta Borinquen GSU would not appreciably change and no new permanent jobs would be created from implementing the Proposed Action. This section discusses the proposed projects.

One project involves new construction, which would add approximately 2,100 SF (195 square meters [SM]) of new building and impervious surface, and one project involves facility demolition. The construction project, identified by its ANG project number, would be implemented on previously disturbed land. The demolition project involves removing Building 23 to allow the construction of the new facility and removal of underground storage tanks (USTs) and an associated fuel pump and concrete pad.

- Construct Weapon System Facility (TKWR182304) (Fiscal Year 2022 [FY22]). This project constructs an approximately 2,100-SF weapons system facility.
- Remove USTs (TKWR212302) (FY21). This project involves removing a concrete pad, a fuel pump, and two USTs.

Renovation and Infrastructure Repair Projects

Four projects involve renovation or infrastructure repair:

- Upgrade Main Gate (TKWR222302) (FY22). This project involves reconstructing the gate facility to comply with AT/FP requirements.
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- Repair and Reseal Parking Lots and Roads (TKWR222303) (FY22). This project involves repairing approximately 3,200 SF of deteriorated pavement on the base.

f. Point of Contact:

Name: Jonas Berge
Title: Air Quality Scientist
Organization: Tetra Tech
Email: jonas.berge@tetrattech.com
Phone Number: 4146403487

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

_____ applicable
 ___X___ not applicable

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

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

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

Analysis Summary:

2023

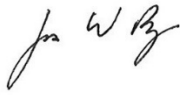
Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.493	250	No
NOx	3.490	250	No
CO	5.546	250	No
SOx	0.011	250	No
PM 10	0.358	250	No
PM 2.5	0.146	250	No
Pb	0.000	25	No
NH3	0.012	250	No
CO2e	968.9		

2024 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.209	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No

NH3	0.000	250	No
CO2e	0.0		

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



Jonas Berge, Air Quality Scientist

20 April 2022

DATE

Appendix D

Bat Surveys at Three National Guard Sites in Puerto Rico

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Final

Bat Surveys at Three National Guard Sites in Puerto Rico

**Muñiz Air National Guard Base
Punta Salinas Geographically Separated Unit
Punta Borinquen Geographically Separated Unit**

November 2021

**Prepared for: National Guard Bureau / USACE, Mobile
District, Mobile, AL**

**Prepared by: Armando Rodriguez, PhD/ Puerto Rico Bat
Conservation Program**

With Assistance from: Tetra Tech, Inc., San Juan, PR

Contract No.: W9127820F0461

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ANGB	Air National Guard Base
DNER	Puerto Rico Department of Natural and Environmental Resources
GPS	global positioning system
GSU	Geographically Separated Unit
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

This report contains summary results of bat surveys conducted on Muñiz Air National Guard Base (ANGB), Punta Salinas Geographically Separated Unit (GSU), and Punta Borinquen GSU in Puerto Rico to determine whether bat species are present on any of the sites. The surveys were conducted in accordance with survey protocols established by the U.S. Fish and Wildlife Service (USFWS) and the Puerto Rico Department of Natural and Environmental Resources (DNER).

The *Caribbean Endangered Species Map for Puerto Rico and US Virgin Islands* provides the federally listed species in the 78 municipalities of Puerto Rico and the islands of St. Croix, St. John, and St. Thomas (USFWS 2011). The map does not identify any threatened or endangered bat species in Puerto Rico. Similarly, no bat species are included on the USFWS list of threatened or endangered species and critical habitats for Puerto Rico (USFWS 2021). This information was confirmed by Ms. Marelisa Rivera, USFWS Caribbean Ecological Services Field Office, who stated, “Bats in Puerto Rico are not listed under the Endangered Species Act, therefore no federal permits / protocols for surveys are required or needed.” (Appendix D).

The objective of the survey was to determine the presence of bats at Muñiz ANGB, Carolina, PR; Punta Salinas GSU, Toa Baja, PR; and Punta Borinquen GSU, Aguadilla, PR, providing information needed to consider in all activities related to construction, demolition, and renovation projects while protecting identified natural resources. Muñiz ANGB is on the eastern edge of the Luis Muñoz Marín International Airport property a few miles east of San Juan (Figure 1). It occupies about 95 acres on the south side of the airport’s north runway and is mostly developed; only the eastern portion is vegetated. Airport facilities are to the west, an airport runway is to the north, undeveloped marshland is to the south, and the Laguna La Torrecilla is to the east.

Punta Salinas GSU occupies about 30 acres on the Punta Salinas peninsula and adjacent East Island in northern Toa Baja, about 12.5 miles west of Muñiz ANGB. A causeway connects the Punta Salinas peninsula and East Island. A developed area on the peninsula houses most site functions. Much of the site is vegetated with either natural vegetation or maintained grass, among which are some outlying buildings.

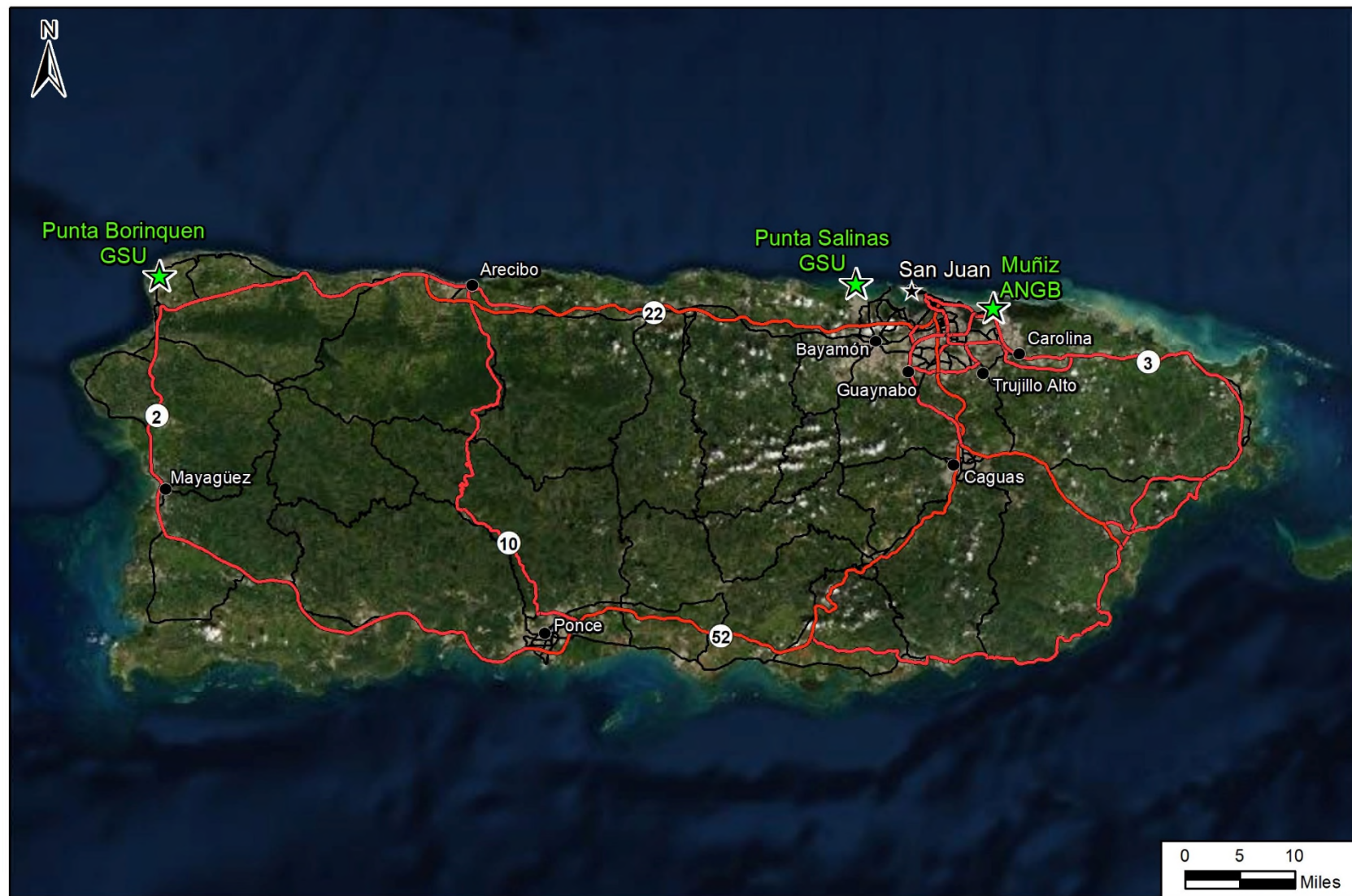
Punta Borinquen GSU measures approximately 6.5 acres and is on the west side of PR Route 107, west of Rafael Hernandez Airport. The site is primarily developed.

The lead surveyor originally predicted that at least two bat species would be detected: the insect-eating velvety free-tailed bat (*Molossus molossus*) and the fruit-eating common fruit bat (*Artibeus jamaicensis*). Table 1 provides the common names for these species, which are very common and abundant throughout the island. The velvety free-tailed bat is predominantly urban, roosting in houses and other facilities. Common fruit bat is common in urban areas, although, as with other plant-eating bats on Puerto Rico, their numbers decreased as a result of Hurricane Maria and have not fully recovered.

2.0 BACKGROUND

2.1 Vegetation and Climate

All three sites are located within the Subtropical Moist Forest Life Zone (Ewel and Whitmore 1973), with evergreen to semideciduous vegetation. Several introduced species of plants have turned the surrounding habitats into novel forests (Lugo et al. 2019). Average monthly

**LEGEND**

★ Survey Location

ANGB=Air National Guard Base
GSU=Geographically Separated Unit**Figure 1. Bat Survey Site Locations**

temperatures in San Juan and Toa Baja are about 77 degrees Fahrenheit (°F) in January and 83 °F in August. Precipitation in the two locations averages about 1 inch in March to almost 5 inches in November, with average annual precipitation of about 34 inches. Average monthly temperatures in Aguadilla are about 77 °F in February and 82 °F in August. Precipitation averages about 0.2 inch in December and January and 3 inches in September, with average annual precipitation of about 14 inches.

2.2 Species Background

Thirteen species of bats occur in Puerto Rico (Table 1), seven of which eat mainly insects; four of which eat fruit, nectar, and some insects; and one of which eats fish and insects (Gannon et al. 2005; Rodríguez-Durán and Christenson 2012).

Table 1. Bat Species Reported in Puerto Rico

Common name	Scientific name	Feeds on	Day roost
Antillean fruit-eating bat	<i>Brachyphylla cavernarum</i>	Insects and fruits	Caves
Antillean ghost-faced bat	<i>Mormoops blainvillei</i>	Insects	Caves
Big brown bat	<i>Eptesicus fuscus</i>	Insects	Caves and groves
Brown flower bat	<i>Erophylla bombifrons</i>	Fruits, pollen, and nectar	Caves
Common fruit bat	<i>Artibeus jamaicensis</i>	Fruits and leaves	Caves, hollow trees, and groves
Fish-eating bat	<i>Noctilio leporinus mastivus</i>	Fish and insects	Caves and hollow trees
Greater Antillean long-tongued bat	<i>Monophyllus redmani</i>	Pollen and nectar	Caves
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>	Insects	Caves
Minor red bat	<i>Lasiurus minor</i>	Insects	Trees
Puerto Rican mustached bat	<i>Pteronotus portoricensis</i>	Insects	Caves
Red fig-eating bat	<i>Stenoderma rufum</i>	Fruits	Trees
Sooty mustached bat	<i>Pteronotus quadridens</i>	Insects	Caves
Velvety free-tailed bat	<i>Molossus molossus</i>	Insects	Houses and palms

Of the 13 species of bats present in Puerto Rico, 11 have been observed in remnant habitat within developed areas—all species listed in Table 1 except the Antillean fruit-eating bat (*Brachyphylla cavernarum*) and Antillean ghost-faced bat (*Mormoops blainvillei*) (Rodríguez-Durán and Felicano-Robles 2016).

The probability of detecting species that use these remnant habitats on the sites depends on the presence of corridors connecting to forested areas and the density of the inhospitable matrix—represented by urban areas—where each site is located. Two of these species, the Puerto Rican mustached bat (*Pteronotus portoricensis*) and the red fig-eating bat (*Stenoderma rufum*), are endemic to Puerto Rico or surrounding islands. Two more of the species, the brown flower bat (*Erophylla bombifrons*) and the minor red bat (*Lasiurus minor*), can be found only in Puerto Rico and Hispaniola. Therefore, although these four species are not federally listed, they are

vulnerable because of their limited distribution. Additionally, the population of the minor red bat is very small.

3.0 METHODOLOGY

3.1 Task Personnel

Table 2 lists personnel who participated in the surveys. Dr. Armando Rodríguez was the overall team leader for the surveys and ensured compliance with protocols specified in this report.

Table 2. Team Roles and Responsibilities on Each Site

Role and responsibilities	Muñiz ANGB	Punta Salinas GSU	Punta Borínquen GSU
Principal Team Leaders	Dr. Armando Rodríguez Alexis Dragoni	Dr. Armando Rodríguez Alexis Dragoni	Dr. Armando Rodríguez Alexis Dragoni
Team Leader (TL) Responsibilities: Initial site reconnaissance, determine sampling stations and methods.	Yaritza Morales Armando Rodriguez	Yaniré Martinez Armando Rodriguez	Yadamaris Aviles Armando Rodriguez
Field Assistant 1 Responsibilities: Assist TL, operate walkabout bat detector, set up ANABAT bat detector.	Kamile Andujar	Yaritza Morales	Natalie Nieves
Field Assistant 2 Responsibilities: Assist TL, take notes, operate GPS, assist sampling.	John Rosa	Natalie Nieves	Edwin Monroig

Three teams conducted the fieldwork. All personnel participating in the survey work were properly trained in identifying bat species that might occur in the project area and in the survey protocols and held the permit required by DNER. All team members are part of the Puerto Rico Bat Conservation Program and have been trained in the use of equipment and handling of bats. One to three persons visited each site, depending on whether mist nets were used on the night of the survey. Each team consisted of a team leader and field assistants, as needed, to support

the team leader, taking notes, operating the global positioning system (GPS) unit, or assisting with sampling. Tasks not performed by field assistants were conducted by the team leader.

3.2 Site Access and Coordination

The point of contact for each site provided the Tetra Tech Project Manager with the background check form for project staff to complete and return prior to conducting the initial site reconnaissance. All team members passed the background check and were granted access.

To ensure a thorough sampling, Dr. Rodríguez originally proposed that each site be monitored over a period of 10 nights from 4:00 p.m. to midnight. Ultimately, the final agreement with Puerto Rico Air National Guard personnel was to monitor each site over a period of 12 nights throughout each night to maximize the chances of detecting bats.

3.3 Survey Methods

The survey methodology included coordinating with DNER prior to conducting the surveys to obtain any new or updated guidance, or to make any modifications to the standard protocol that might be necessary for the surveys. Some modifications were made to the original methodology based on these recommendations. The full methodology is in Appendix C.

3.4 Desktop Assessment

Before the teams initiated any field work, a qualified biologist conducted a desktop assessment using Google Earth to identify areas that might be used by bats for foraging and roosting (USFWS 2020). Potentially suitable roosting habitat was identified based on forest patch size and proximity to suitable foraging habitats. In addition to potential roosting habitat, the biologist also identified landscape features that might be used by bats commuting between roosting and foraging habitats (e.g., fence rows and wind breaks). The biologist also identified protected natural resources near each site (e.g., parks, wildlife refuges, and wildlife management areas).

The desktop assessment informed decision-making regarding (1) the appropriate level of effort required for field verification, (2) the number of acoustic detectors to deploy, (3) the approximate locations to deploy the acoustic detectors and mist nets. The final determinations were made on-site.

3.5 Field Verification and Habitat Assessment

The teams used field maps and a Garmin ETREX 22X GPS unit to focus the habitat assessment on areas previously identified as potentially suitable roosting and foraging habitat. Monitoring locations within each site were established after an initial inspection of the site. Structures at each site were surveyed for resident bat colonies.

3.6 Field Data Collection

3.6.1 ANABAT Detector Systems

Based on the results of the habitat assessment, four ANABAT detectors were deployed from June 7 to July 16, 2021, each for 12 nights, for a total of 48 detector-nights. ANABAT Express Passive Bat Detector systems were placed at two sampling stations on Muñiz ANGB and at one station each on Punta Salinas GSU and Punta Borínquen GSU. Ultrasonic detection was carried out at ground level. Bat calls recorded by the ANABAT were compared to an existing database. Each site was passively monitored on 12 occasions throughout the night. Before

monitoring nights, each site was assessed for suitability of habitat for phyllostomid, or leaf-nosed bats, which constitute a large proportion of bats in the Neotropics, or New World tropics.

Detectors were deployed adjacent to or directed toward the most suitable bat habitat identified on each site. Two detectors were deployed at Muñoz ANGB and one detector each was deployed on Punta Salinas GSU and Punta Borinquen GSU (Figures 2–4).

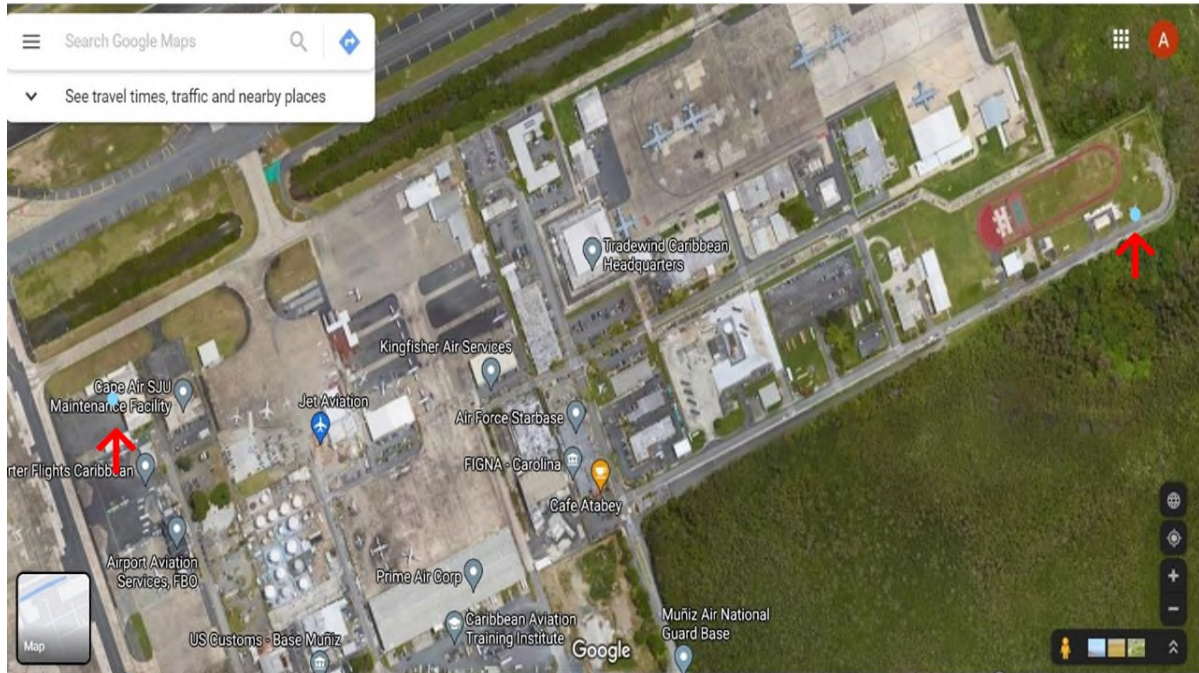


Figure 1. Muñoz ANGB ANABAT detector locations (indicated by blue dots pointed at by red arrows). Detector BM1 (*left*) at 18°26.620'N; 65°59.783'W. Detector BM2 (*right*) at 18°26.602'N; 65°59.326'W.

Field personnel placed detector microphones to provide the highest quality recordings possible and ensure accurate identification of call sequences. Microphones were oriented horizontal to the ground surface or towards the sky when not obstructed by vegetation or buildings or other structures. In accordance with current USFWS guidelines, every effort was made to place the microphones at least 10 feet from any obstructions, parallel to forest edges, and in an area without vegetation or with minimal vegetation within 33 feet of the microphone (USFWS 2020).

3.6.2 Mist Netting

Mist nets were used only at Punta Salinas GSU, as preliminary analysis suggested that it was the only site with habitat suitable for the use of that survey method. Forty to 80 feet of mist nets were deployed at 30 feet elevation on two nights on Punta Salinas GSU. Mist netting commenced 30 minutes before sunset and ended after 4 hours. The area around mist netting stations and buildings were also surveyed with an ANABAT Walkabout Active Bat Detector.

Bats captured in mist nets were handled using gloves and wearing face masks, following a protocol previously discussed with the DNER regarding COVID-19. The protocol was discussed with Nilda Jimenez and Ramón L. Rivera from DNER and was developed and adopted by the



Figure 2. Punta Salinas GSU ANABAT detector location (indicated by blue dot pointed at by red arrow). Detector PS1 at 18°28.431'N; 66°11.065'W. Mist nets were set in the same area.



Figure 3. Punta Borínquen GSU ANABAT detector location (indicated by blue dot pointed at by red arrow). Detector PB1 at 18°29.073'N; 67°08.900'W.

Puerto Rico Bat Conservation Program after sharing it with DNER for comment. It is based on a more comprehensive protocol developed by the Latin American Bat Conservation Network. Captures were recorded and bats then released immediately on-site.

3.6.3 Documentation of Sampling Locations

GPS coordinates were recorded for each sampling location using a Garmin ETREX 22X GPS. Photographs were taken at each detector location, including of the habitat around the detectors (Appendix A).

3.6.4 Data Analysis and Reporting

The project team analyzed recorded data according to current USFWS guidelines, which recommend a multistage approach to call analysis (USFWS 2020). First, all data was sifted through a coarse filter analysis to remove non-bat noise files. The coarse filtering was followed by initial and final quantitative analyses conducted by a qualified biologist. Dr. Rodríguez verified the species identifications.

4.0 RESULTS

The desktop and field-based habitat assessments indicated that all three sites represent remnant habitat, most likely used as foraging ground or commuting space for species typical of disturbed habitats (Rodríguez-Durán and Otero 2011; Rodríguez-Durán and Feliciano-Robles 2016).

Trace precipitation was observed on some nights, but not enough to preclude bat activity, as evidenced by records obtained from the detectors. Overall, survey nights were favorable for recording bat activity (Gannon et al. 2005; Rodríguez-Durán and Vázquez 2001). Results were reported on all 12 nights at each site and support the preliminary desktop and field-based habitat assessments (Tables 3–6).

Acoustic detectors and mist nets confirmed the presence of five species during the survey: common fruit bat, big brown bat (*Eptesicus fuscus*), velvety free-tailed bat, sooty mustached bat (*Pteronotus quadridens*), and Mexican free-tailed bat (*Tadarida brasiliensis*). The velvety free-tailed bat and Mexican free-tailed bat were detected at Muñiz ANGB; velvety free-tailed bat, Mexican free-tailed bat, sooty mustached bat, and common fruit bat were detected at Punta Salinas GSU; and velvety free-tailed bat, sooty mustached bat, and big brown bat were detected at Punta Borinquen GSU. Representative photographs of bats encountered during the survey are in Appendix B.

Each bat acoustic recording classified under “No ID” was revealed by manual examination of the recording as a bat but it could not be identified to species level. Inability to identify the species from a recording is often the result of a poor signal caused by distance or angle relative to the microphone or excessive background noise cluttering the signal caused by insects or machinery. As expected, *Velvety free-tailed bat* was by far the most common species detected at the four stations. The presence of sooty mustached bat at both Toa Baja and Aguadilla is attributed to the location of the two sites within the main karst area of Puerto Rico.

Interpreting results based solely on the number of species identified by software auto-classification can be misleading, as there are varying levels of confidence associated with each classification. In most cases, manual review of bat passes by experienced biologists serves as the most accurate method for identifying species. It is also misleading to correlate the number of records with the abundance of bats. Many records can be the result of many bats using the area

Table 3. Bats Recorded with ANABAT Express BM1 at Muñiz ANGB
(Detector BM1 at 18°26.620'N; 65°59.783'W)

Survey date	Weather	Total recorded bat activity	Velvety free-tailed bat	Mexican free-tailed bat	No ID
June 10, 2021	Light rain	21	21	-	-
June 11, 2021	Light rain	7	7	-	-
June 17, 2021	Light rain	112	112	-	-
June 18, 2021	Clear	4	4	-	-
June 24, 2021	Clear	34	34	-	-
June 25, 2021	Clear	20	20	-	-
July 1, 2021	Clear/windy	16	16	-	-
July 2, 2021	Clear/windy	69	54	6	9
July 8, 2021	Clear	17	17	-	-
July 9, 2021	Clear	110	110	-	-
July 15, 2021	Clear	24	24	-	-
July 16, 2021	Clear	30	30	-	-
Total		464	449	6	9

Table 4. Bats Recorded with ANABAT Express BM2 at Muñiz ANGB
(Detector BM2 at 18°26.602'N; 65°59.326'W)

Survey date	Weather	Total recorded bat activity	Velvety free-tailed bat	Mexican free-tailed bat	No ID
June 10, 2021	Light rain	67	50	-	17
June 11, 2021	Light rain	48	44	-	4
June 17, 2021	Light rain	186	149	-	37
June 18, 2021	Clear	118	102	-	16
June 24, 2021	Clear	80	76	4	-
June 25, 2021	Clear	77	57	17	3
July 1, 2021	Clear/windy	2	2	-	-
July 2, 2021	Clear/windy	51	46	-	5
July 8, 2021	Clear	97	89	2	6
July 9, 2021	Clear	174	158	6	10
July 15, 2021	Clear	87	76	3	8
July 16, 2021	Clear	103	75	15	13
Total		1090	924	26	42

Table 5. Bats Recorded with ANABAT Express at Punta Salinas GSU
(Detector PS1 at 18°28.431'N; 66°11.065'W)

Survey date	Weather	Total recorded bat activity	Velvety free-tailed bat	Sooty mustached bat	No ID
June 10, 2021 ^a	Cloudy	8	8	-	-
June 11, 2021 ^b	Cloudy	1	1	-	-
June 16, 2021	Cloudy	8	8	-	-
June 17, 2021 ^c	Cloudy	175	-	-	175
June 23, 2021	Cloudy	7	6	-	1
June 24, 2021 ^b	Cloudy	25	25	-	-
June 30, 2021	Cloudy	44	-	-	44
July 1, 2021	Cloudy	10	9	1	-
July 7, 2021	Cloudy/windy	1	1	-	-
July 8, 2021	Cloudy/windy	1	-	-	1
July 14, 2021	Cloudy/windy	50	50	-	-
July 15, 2021	Cloudy/windy	3	-	-	3
Total		333	50	1	3

Notes:a: *Common fruit bat* captured with mist net.b: *Tadarida brasiliensis* detected with ANABAT Walkabout Active Bat Detector.

c: Noise from generator at premises precluded reliable identification of species.

Table 6. Bats Recorded with ANABAT Express at Punta Borinquen GSU
(Detector PB1 at 18°29.073'N; 67°08.900'W)

Survey date	Weather	Total recorded bat activity	Velvety free-tailed bat	Sooty mustached bat	Big brown bat	No ID
June 7, 2021	Cloudy	2	2	-	-	-
June 8, 2021	Cloudy	-	-	-	-	-
June 15, 2021	Clear	12	11	-	1	-
June 16, 2021	Clear	3	3	-	-	-
June 22, 2021	Rainy	21	19	2	-	-
June 23, 2021	Clear	19	16	3	-	-
June 29, 2021	Clear	26	24	2	-	-
June 30, 2021	Cloudy	28	25	3	-	-
July 6, 2021	Clear	14	13	1	-	-
July 7, 2021	Clear	8	6	2	-	-
July 13, 2021	Clear	-	-	-	-	-
July 14, 2021	Clear	26	14	12	-	-
Total		26	40	26	1	0

or a few bats consistently foraging in the same spot. A total of 1,993 bat passes was recorded at the four stations deployed on the three sites between June 7 and July 16, 2021 (Figure 5).

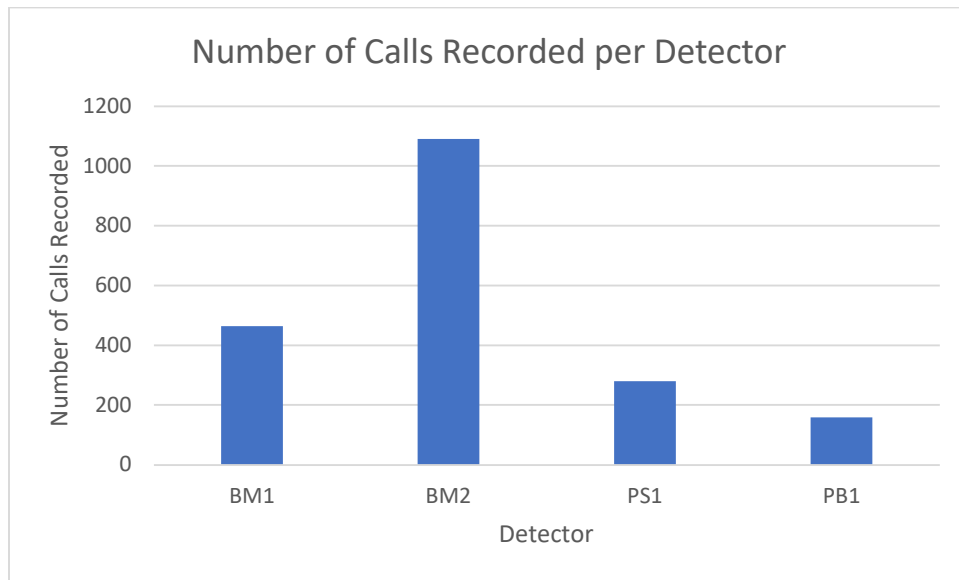


Figure 4. Relative activity of bats across the four stations at the three sites. Base Muniz (BM) 1 and 2, Punta Salinas (PS1), and Punta Borínquen (PB1). Locations are shown in Figures 2–4.

All detectors were functional for the entire survey period. The operation of a generator and strong lights near detector PS1 on Punta Salinas GSU on the night of June 17, 2021, did not reduce bat activity but precluded identification of species because of noise cluttering of the bat signals. One common fruit bat, a phyllostomid bat, was captured in a mist net at Punta Salinas GSU. A large proportion of bats in the Neotropics belong to the family Phyllostomidae. Many phyllostomid bats are considered whispering bats, making difficult their identification with acoustic detectors. Most “No ID” calls from Muñoz ANGB were likely the result of phyllostomid bats foraging in trees just outside the site.

The species accumulation curve (Figure 6) suggests a stabilization in the number of species. No additional species were detected at any of the four stations after the fourth week. Complete identification of all species at any site, however, could take up to 2 years (Rodríguez-Durán and Otero 2011). Nevertheless, based on the characteristics of the bat signals recorded and the physical characteristics of the sites, it is likely that most of the activity recorded was bats commuting rather than active use of the sites for roosting or foraging.

5.0 CONCLUSIONS

The populations of two species of bats (red fig-eating bat and brown flower bat) are listed as vulnerable by DNER because of habitat loss; neither is federally listed. The red fig-eating bat is endemic to Puerto Rico and nearby islands, and the brown flower bat is found only in Puerto Rico and Hispaniola. Neither species was detected during the survey. Because identifying all the species within a specific habitat in Puerto Rico might require up to 2 years of monitoring (Rodríguez-Durán and Otero 2011) and because of the whispering nature of phyllostomid bats,

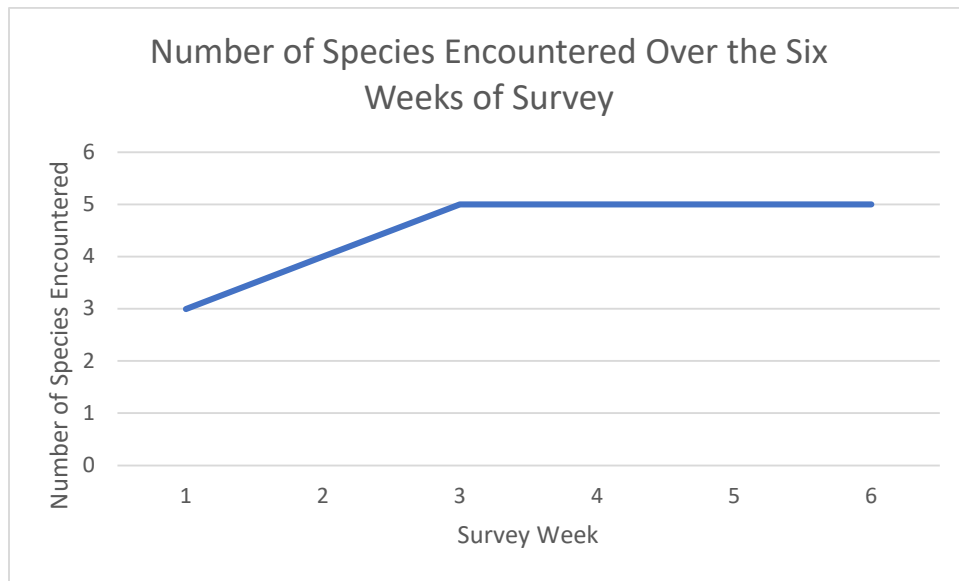


Figure 5. Combined species accumulation curve for the three sites.

it is difficult to definitively rule out the presence of brown flower bat or red fig-eating bat through acoustics or from mist netting in areas with sparse vegetation. The fish-eating bat (*Noctilio leporinus mastivus*) was not detected at Punta Salinas GSU or at Muñiz ANGB, possibly because of the duration of the monitoring activities. Nevertheless, based on the characteristics of the bat signals recorded and the physical characteristics of the sites, it is likely that most of the bat activity occurring consists of commuting and some foraging as part of a trap-line route, rather than active use of the sites for roosting or important foraging grounds. No roosting sites were identified from visual inspection or suggested by monitoring with the ANABAT Walkabout Active Bat Detector.

The most commonly bat detected, velvety free-tailed bat, is a ubiquitous species, widespread throughout the island, especially in habitats impacted by humans (Rodríguez-Durán and Feliciano-Robles 2016). Its abundance at the two stations on Muñiz ANGB is likely related to the presence of wooden and unfinished cinder block houses in the surrounding areas. These types of structures are preferred roosting sites of velvety free-tailed bat and are commonly used by the Mexican free-tailed bat.

6.0 RECOMMENDATIONS

Depending on the nature and extent of activities within any area in northern Puerto Rico, there is always the potential to directly impact commuting bats (Rodríguez-Durán and Feliciano-Robles 2015). Bat activity on all three sites was dominated by velvety free-tailed bat, a ubiquitous species. Depending on the nature and extent of activities within the areas of interest, there is the potential to directly impact commuting bats. Although surveys with ANABAT Walkabout do not suggest the occurrence of bats roosting in buildings within any of the three bases, it is recommended that any building targeted for demolition or renovation be closely inspected for bat colonies. In the unlikely event that such colonies are found, humane exclusion should be implemented between the months of October through April, when pups are less likely to be found.

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APPENDIX A

PHOTOGRAPHS OF MONITORING STATIONS AND DETECTORS

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Figure A-1



Figure A-2



Figure A-3

Figures A-1, A-2, and A-3 show the location of and view from detector BM1 on Muñiz ANGB, Carolina.



Figure A-4



Figure A-5

Figures A-4 and A-5 show the location of and view from detector BM2 on Muñiz ANGB, Carolina.



Figure A-6. Location of detector PS1on Punta Salinas GSU, Toa Baja.



Figure A-7. Mist netting on Punta Salinas GSU, Toa Baja.

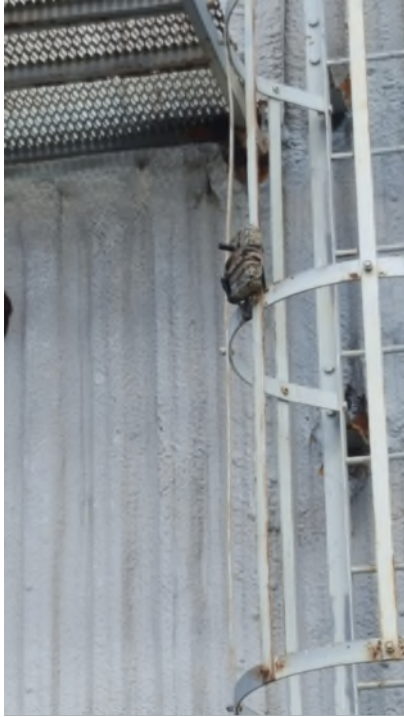


Figure A-8



Figure A-9

Figures A-8 and A-9 show the location of and view from detector PB1 on Punta Borínquen GSU, Aguadilla.

APPENDIX B

PHOTOGRAPHS OF BAT SPECIES ENCOUNTERED

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Figure B-1. Fruit-eating bat, *Artibeus jamaicensis*



Figure B-2. Big Brown bat, *Eptesicus fuscus*



Figure B-3. *Velvety Free tailed bat, Molossus molossus*



Figure B-4. *Mexican free tailed bat, Tadarida brasiliensis*



Figure B-5. Mustached bat, *Pteronotus quadridens*

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APPENDIX C

SURVEY METHODOLOGY

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Methodology for Bat Survey at Three Sites in Puerto Rico

**National Guard 156th Wing at Muñoz Marín IAP, San Juan;
140th Air Support Squadron in Punta Salinas;
and 141st Air Control Squadron in Punta Borínquen**

Revised May 2021

**Prepared for: Air National Guard / USACE, Mobile
District, Mobile, AL**

Prepared by: Armando Rodriguez, PhD

With Technical Assistance from: Tetra Tech, Inc.

Contract No.: W9127820F0461

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ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
ACS	Air Control Squadron
ANG	Air National Guard
DNER	Puerto Rico Department of Natural and Environmental Resources
ESA	Endangered Species Act
GPS	global positioning system
IAP	International Airport
NLEB	northern long-eared bat
PCBPR	Program for the Conservation of Bats of Puerto Rico
POC	point of contact
QA/QC	quality assurance/quality control
SPTS	Air Support Squadron
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WG	Wing

1.0 INTRODUCTION

Tetra Tech will conduct bat surveys on three Air National Guard (ANG) installations to determine the presence or absence of all bat species, including federal-, state-, and/or territory-threatened and endangered bat species, on each installation in accordance with survey protocols established by the U.S. Fish and Wildlife Service (USFWS) and/or the state and/or territory fish and wildlife agency. The *Caribbean Endangered Species Map for Puerto Rico and US Virgin Islands* provides the federally listed species in the 78 municipalities of Puerto Rico and the islands of St. Croix, St. John, and St. Thomas (USFWS 2011). The map does not feature any threatened or endangered bat species in Puerto Rico. Similarly, no bat species are included on the USFWS list of threatened or endangered species and critical habitats for Puerto Rico (USFWS 2021). This information has been confirmed by Ms. Marelisa Rivera, USFWS Caribbean Ecological Services Field Office, who stated, "Bats in Puerto Rico are not listed under the Endangered Species Act (ESA), therefore no federal permits / protocols for surveys are required or needed." (Rivera 2020, personal communication)

1.1 Survey Objectives

The objective of the survey is to determine the presence or absence of bats at three sites in Puerto Rico (National Guard 156th Wing [WG] at Muñoz Marín International Airport [IAP], San Juan; 140th Air Support Squadron [SPTS] in Punta Salinas; and 141st Air Control Squadron [ACS] in Punta Borínquen), providing information that installation personnel need to consider in all activities related to renovations, demolitions, and construction while protecting identified natural resources. Information from the survey will provide baseline data required to accomplish the following:

- Comply with the requirements of the ESA (Title 16 of the *United States Code* § 1531 *et seq.*) and Army Regulation 200-1, *Environmental Protection and Enhancement*.
- Comply with local regulation overseen by the Puerto Rico Department of Natural and Environmental Resources (DNER).
- Meet natural resources management goals.
- Meet legal and policy requirements consistent with current national natural resources management philosophies.

1.2 Survey Methodology

The purpose of this survey methodology is to provide a brief context for the project and outline the survey methods to be used, the project schedule, and deliverable requirements. It briefly reviews the bats regulatory framework and biology, describes the methods Tetra Tech will use to conduct the surveys, and provides a preliminary review of the project's anticipated level of effort.

1.3 Regulatory Framework

As noted, no bats in Puerto Rico are listed under the ESA, therefore, no federal permits / protocols for surveys are required or needed, as confirmed by Marelisa Rivera, USFWS Caribbean Ecological Services Field Office. However, the proponent needs a research permit from DNER for conducting any research with wildlife in Puerto Rico. Law No. 241 of August 15, 1999, as amended, known as the "New Wildlife Law," confers jurisdiction on the Secretary of the DNER to regulate the granting of permits for the use of wildlife and associated activities. The

procedure related to authorizations and permits is described in the *Regulation to Govern the Conservation and Management of Wildlife, Exotic Species and Hunting in the Commonwealth of Puerto Rico*, dated February 11, 2004 (Regulation # 6765), and the *Regulation to Govern Vulnerable and Endangered Species in Puerto Rico*, dated February 11, 2004 (Regulation # 6766). The agency does not have a particular restriction period during which bat surveys must be conducted. The DNER evaluates a proposal submitted by the proponent as part of the permit process.

Dr. Armando Rodríguez-Durán, the lead scientist for Tetra Tech in this survey, is Full-Professor at the InterAmerican University and a recognized scientific researcher in Puerto Rico. His field experience with bats (besides Puerto Rico) includes work in Australia, Brazil, India, Mexico, Panama, Malaysia, Costa Rica, and the Dominican Republic. Dr. Rodríguez is founder and director of the Mata de Plátano Field Station, a research and educational center in the karst region of northern Puerto Rico. He also founded the *Program for the Conservation of Bats of Puerto Rico* (PCBPR), a program affiliated to the Latin American Network for the Conservation of Bats. Dr. Rodríguez will obtain the permit from DNER to perform the survey with the field team. The permit request shall include the *Curriculum Vitae* of the Principal Investigator.

2.0 SETTING

The 156 WG is on the eastern edge of the Luis Muñoz Marín IAP property within a few miles of the city of San Juan, Puerto Rico. It occupies about 95 acres on the south side of the north runway. The 140 SPTS is a geographically separated unit of the 156 WG that occupies about 30 acres in the Punta Salinas peninsula adjacent East Island in northern Toa Baja, Puerto Rico. The 140 SPTS is about 12.5 miles west of the 156 WG. A road connects the Punta Salinas Peninsula and East Island. The 141 ACS, also referred to as Punta Borínquen Radar Site, is a geographically separated unit of the 156 WG. The 141 ACS is at former Ramey Air Force Base, known today as Rafael Hernandez Airport, Aguadilla, Puerto Rico. The unit occupies about 6.5 acres west of the runway on the west side of Puerto Rico Route 107. Included in the boundaries of the base are a housing area, clinic and dispensary, station library, community center, swimming pool, exchange, mini-mart, package store, gymnasium and other fitness facilities, chapel, and theater.

Average monthly temperatures in San Juan / Toa Baja are about 77 degrees Fahrenheit (°F) in January and 83 °F in August. Precipitation averages about 1 inch in March to almost 5 inches in November, with an average annual precipitation of about 34 inches. Average monthly temperatures in Aguadilla are about 77 °F in February and 82 °F in August. Precipitation averages about 0.2 inch in December and January and 3 inches in September, with an average annual precipitation of about 14 inches.

3.0 SURVEY METHODOLOGY

3.1 Task Personnel

Both Tetra Tech's Task Lead, Alexis Dragoni, and Subject Matter Expert, Dr. Armando Rodríguez, hold natural resource degrees and have training and extensive professional experience related to the work to be conducted for this project.

Mr. Dragoni specializes in integrating multidisciplinary information to solve complex problems related to natural resource management, environmental impact analysis, conservation, and environmental modeling. He brings in 26 years of experience in the natural resources sector and is an expert on geographical information systems, remote sensing, and ecology.

Dr. Rodríguez will be the field team leader for the survey and will ensure compliance with protocols specified in this report. He will coordinate directly with Mr. Dragoni on technical issues and quality assurance/quality control (QA/QC) for the fieldwork and reporting. Appendix A provides Dr. Rodríguez's qualifications for completing the survey.

Three teams with a minimum of two individuals are required to perform the fieldwork. All personnel participating in the survey work will be properly trained in the identification of bat species that may occur in the project area, will be properly trained in the survey protocols, and will hold the permit required by the DNER to perform the field assessment. All team members will be part of PCBPR and will have been trained in the use of equipment and handling of bats. Some are former or current students of Dr. Rodríguez. There will be two to three persons per team, depending on whether mist nets will be used on the night of the survey. Each team will consist of a team leader and a field assistant, with a second field assistant joining if mist netting will be conducted on that night. The field assistant will be tasked with assisting the team leader, setting up the ANABAT equipment, and using the walkabout bat detector. If needed, the second field assistant will be tasked with assisting the team leader, taking notes, using the global positioning system (GPS) unit, and assisting with sampling. Tasks not performed by either field assistant will be conducted by the team leader.

Table 2. Teams and personnel role on each facility.

Team Role	National Guard 156th Wing at Muñoz Marín IAP, San Juan	140th Air Support Squadron in Punta Salinas	141st Air Control Squadron in Punta Borinquen
Team Head Leaders	Dr. Armando Rodríguez Mr. Alexis Dragoni	Dr. Armando Rodríguez Mr. Alexis Dragoni	Dr. Armando Rodríguez Mr. Alexis Dragoni
Team Leader (TL) Role: initial site reconnaissance, determine sampling sites, set-up miss net.	Yaritza Morales Armando Rodriguez	Yaniré Martinez Armando Rodriguez	Yadamaris Aviles Armando Rodriguez
Field Assistance 1 Role: assist TL, walkabout bat detector, set-up ANABAT	Kamile Andujar	Yaritza Morales	Natalie Nieves
Field Assistance 2 Role: assist TL, take notes, GPS, assist sampling	John Rosa	John Rosa Natalie Nieves	Yaniré Martinez Edwin Monroig

3.2 Installation Access and Coordination

The installation point of contact (POC) will provide the Tetra Tech Project Manager with the background check form for project staff to complete and return prior to conducting the initial site reconnaissance. Individuals who pass the background check will be granted installation access for 2 years. Individuals who do not pass the background check will require an escort while on property.

To increase the chances of a thorough sampling, it is proposed that each site will be visited at night on the following 10 dates in 2021: April 24, May 1, May 8, May 16, May 22, May 29, June 5, June 12, June 19, and June 26. Teams will work primarily from 4:00 p.m. to midnight on Saturdays and one Sunday. The dates are tentative pending the results of the initial reconnaissance visit. The final schedule will be updated to perform the assessment at the three sites on different days during the same week.

Field personnel will obtain vehicle passes at the main gate upon arriving at the facilities and will provide the required paperwork, including valid driver's licenses and registration and proof of insurance for personal vehicles or rental agreement and proof of insurance for rental vehicles.

Furthermore, passes will be obtained for cameras, iPads/tablets, and smartphones. Upon entry to the facilities, field staff will furnish the make, model, and serial number of each item being brought onto the installation.

The Task Lead will provide proposed survey dates or changes in scheduled survey dates to the installation POC as soon as possible to coordinate installation access. Once the installation POCs have approved the dates, any significant changes to the schedule will go through the installation POCs and Project Manager.

The Task Lead will be the surveyors' POC for survey-specific questions, such as methods, schedule, and unforeseen complications, that cannot be adequately addressed by field personnel. The facilities POC are the primary contact for any issues related to access.

3.3 Species Background

Thirteen species of bats have been observed in Puerto Rico (Table 1). Seven of these species eat mainly insects; four species eat fruit, nectar, and some insects; and one species eats fish and insects.

Table 1. List of Bats Species Reported in Puerto Rico

Scientific name	Common name	Feeds on	Day shelter
<i>Noctilio leporinus mastivus</i>	fish-eating bat	fish and insects	caves and hollow trees
<i>Pteronotus quadridens fuliginosus</i>	sooty mustached bat	insects	caves
<i>Pteronotus portoricensis</i>	Parnell's mustached bat	insects	caves
<i>Mormoops blainvillei cinnamomeum</i>	Antillean Ghost-faced Bat	insects	caves
<i>Artibeus jamaicensis jamaicensis</i>	common fruit bat	fruits, leaves	caves, hollow trees, and groves
<i>Stenoderma rufum darioi</i>	red fig-eating Bat	fruits	grooves
<i>Eptesicus fuscus wetmorei</i>	big brown bat	insects	caves, grooves
<i>Lasiurus minor</i>	red bat	insects	groves
<i>Tadarida brasiliensis antillarum</i>	Mexican free-tailed bat	insects	caves
<i>Molossus molossus fortis</i>	velvety free-tailed bat	insects	houses and palms
<i>Brachyphylla cavernarum intermedia</i>	Antillean fruit-eating bat	insects, fruits	caves
<i>Erophylla bombifrons</i>	buffy flower bat	fruits, pollen, nectar	caves
<i>Monophyllus redmani portoricensis</i>	Greater Antillean long-tongued bat	pollen, nectar	caves

Of the 13 species of bats present in Puerto Rico, 11 have been observed in remnant habitat within developed areas. These species are the insect-eating *Eptesicus fuscus*, *Molossus molossus*, *Tadarida brasiliensis*, *Noctilio leporinus*, *Pteronotus portoricensis*, *Lasiurus minor*, and *Pteronotus quadridens* and the fruit/nectar-eating *Monophyllus redmani*, *Erophylla bombifrons*, *Stenoderma rufum*, and *Artibeus jamaicensis*.

The probability of detecting these species will depend on the presence of corridors connecting to forested areas and the density of the inhospitable matrix—represented by urban areas—where each base is located. Two of these species, *Stenoderma rufum* and *Pteronotus portoricensis*, are endemic to Puerto Rico or surrounding islands. Another two species, *Erophylla bombifrons* and *Lasiurus minor*, can only be found in Puerto Rico and Hispaniola. Therefore, these four species, although not federally listed, are vulnerable due to their limited distribution; plus, *Lasiurus minor* has a very small population.

It is almost certain that at least two species will be detected at all three sites. The insect-eating *Molossus molossus* and the fruit-eating *Artibeus jamaicensis*. Both these species are very common and abundant throughout the Island. *Molossus molossus* is predominantly urban, roosting in houses and other anthropic structures. *Artibeus jamaicensis* is common in urban areas, although, as with other phytophagous bats, their numbers decreased due to hurricane Maria and have not yet fully recovered.

3.4 Survey Methods

Tetra Tech will conduct the bat surveys at three ANG facilities in Puerto Rico—156 WG, Muñoz Marín IAP, San Juan; 140 SPTS, Punta Salinas; and 141 ACS, Punta Borinquen—to determine the habitat suitability for and the presence or absence of bat species on the installation. The survey methodology is based on the Uniform Administrative Procedure Act of the Government of Puerto Rico (Law No. 170, August 12, 1988) and the Regulation of Terms to Process Permits, Franchises, Endorsements and Similar Authorizations (Regulation 3747, February 6, 1989). It will include coordinating with DNER prior to conducting the survey to obtain any new or updated guidance or to make any modifications to the standard protocol that might be necessary for this survey.

3.4.1 Desktop Assessment

Before any field work, a qualified biologist will conduct a desktop assessment using Google Earth (or a similar application) to review aerial photography and identify areas that might be used by bats for foraging and roosting during breeding and migration seasons (USFWS 2020). Potentially suitable roosting habitat will be identified based on forest patch size and proximity to suitable foraging habitats. Closed-canopy forests will be considered potentially suitable roosting or foraging sites and will be further evaluated during the field assessment. In addition to potential roosting habitat, the biologist will also identify landscape features that might be used by bats commuting between roosting and foraging habitats (e.g., fence rows and wind breaks). Protected natural resources near the installation (e.g., parks, wildlife refuges, and wildlife management areas) will be identified.

The desktop assessment will inform decision-making regarding: (1) the appropriate level of effort required for field verification, (2) the number of acoustic detectors to deploy, and (3) the approximate locations for acoustic detectors to be deployed. The final determination will be on site. Basic field maps and GPS points could be generated during the desktop assessment to support field work.

3.4.2 Field Verification and Habitat Assessment

Field maps, a GPS unit, or an iPad loaded with relevant geographic information system layers could be used to focus the habitat assessment on areas previously identified as potentially suitable roosting and foraging habitat. Maps and geographic information system information are likely to include project boundaries, potential roosting areas, potential foraging habitat, aerial imagery, and wetland locations from the National Wetland Inventory and National Hydrography Dataset as well as any relevant and available shapefiles.

Sampling locations within each site will be established after an initial inspection of each site. Existing structures within each sampling site will be surveyed for resident bat colonies.

One sampling location within each site will be equipped with an ANABAT Express Passive Bat Detector system. Ultrasonic detection will be carried out at ground level. The area around mist netting sites and buildings will also be surveyed with an ANABAT Walkabout Bat Detector. Bat calls recorded by the ANABAT will be compared to an existing database. ANABAT files will be analyzed and verified afterwards by comparing signals with a database previously developed. If necessary, mist nets will be opened at ground level at each site. The number and location of nets to be deployed will be determined after the initial inspection of each site.

3.4.3 Field Data Collection

Each site will be visited from 4 p.m. through midnight on 10 occasions. On the first visit each site will be assessed for suitability of habitat for phyllostomid bats. Based on this initial assessment mist nets may be deployed at some sites for up to five of the 10 nights. On nights when mist netting is carried out, ultrasonic bat detectors will collect data on bat activity during the first 4 hours after sunset. Mist netting will commence 30 minutes before sunset and end after 4 hours. On nights when mist netting is not carried out, an ANABAT Express Passive Bat Detector will be left on-site and recovered the following morning.

Level of Effort

To increase the chances of a thorough sampling, each site is proposed to be visited at night on 10 dates in 2021. Whenever possible the three sites will be monitored on the same nights. The dates are subject to change depending on timely access to the bases for preliminary evaluation, unencumbered access on the dates proposed in a manner that does not delay the onset of monitoring, and weather conditions. The dates are tentative until Dr. Rodríguez visits and examines the sites. The plan is to conduct the surveys on bases during the same weeks, and if possible on the same nights, using three teams.

Detector Type

The survey report will describe the detector types, setup, and settings used to conduct the survey.

Detector Deployment

Dr. Rodríguez-Durán and field personnel will assess the area to ensure that potential habitats are sampled. They will deploy the detectors adjacent to the most suitable bat habitat available on each base.

Microphone Placement

Field personnel will place and orient detector microphones to provide the highest quality recordings possible and ensure accurate identification of call sequences. Microphones will be oriented horizontal to the ground surface or towards the sky when not obstructed by forest

canopy. In accordance with current USFWS guidelines, Tetra Tech will make every effort to place the microphones (one static and one walkabout) at least 10 feet from any obstructions, parallel to forest edges, in an area without vegetation or with minimal vegetation within 33 feet of the microphone, and at least 49 feet from suitable roosting habitat (e.g., snags) (USFWS 2020). Detector microphones will be deployed eight to 10 feet above the ground.

Mist Netting

In the event that mist nets were deemed necessary, bats captured will be handled by technicians experienced in safe and effective removal of bats from such nets, and using gloves and face masks, following a protocol previously discussed with the DNER regarding COVID-19. The protocol was discussed with Nilda Jimenez and Ramón L. Rivera from DNER and was developed and adopted by the PCMPR after sharing it with DNER for comments. It is based to some extent on a more comprehensive protocol developed by the Latin American Network for the Conservation of Bats. Captures will be recorded, and bats will be released immediately on-site.

Documentation of Sampling Locations

GPS coordinates will be recorded for each sampling location. Multiple photographs will be taken at each detector location, including photographs showing the habitat around the detectors, photographs of the deployed detector, and photographs from the detector showing the cone of detection. Also, a general description of the habitat near each location will be provided in the final survey report.

3.4.4 Data Analysis and Reporting

Upon completion of the research and survey efforts, the contractor is to prepare a report of the survey effort. Three version of the report will be prepared—Draft Report, Draft Final Report, and Final Report. The report will include a map of each site in the plan showing locations of the ANABAT and mist net stations and which species were detected/caught at each location.

The project team will analyze recorded data according to current USFWS guidelines, which recommend a multistage approach to call analysis (USFWS 2020). First, all data will be run through a coarse filter analysis to remove nonbat noise files. The coarse filtering will be followed by a quantitative analysis and a final qualitative analysis by a qualified biologist. One of the field assistants will perform a preliminary evaluation; afterwards, Dr. Rodríguez will confirm the species identifications. After the survey, the team will complete the analysis and summary of acoustic data. Recorded bats call sequences and automated classification software outputs will be provided at the request of ANG.

4.0 DATA PROCESSING AND QA/QC

Surveyors are responsible for the quality and accuracy of data collection. GPS data and field form data will be collected. Each team will download field data from the GPS unit, perform a QA/QC review, and send data via email to the Task Lead. All data will be reviewed for accuracy and completeness.

5.0 LITERATURE CITED

Ms. Marelisa Rivera, Deputy Field Supervisor, USFWS Caribbean Ecological Services Field Office, December 16, 2020. Email from Ms. Marelisa Rivera to Sam Pett, Tetra Tech, Inc., re: Conducting bat surveys in Puerto Rico.

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5 <https://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>.
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7 *under the jurisdiction of the Fish and Wildlife Service of the U.S.* Accessed March 2021.
8 https://www.fws.gov/caribbean/ES/documents/Species_List_Spanish.pdf.

APPENDIX A Qualifications

Armando Rodríguez

CURRICULUM VITAE

Armando Rodríguez-Durán

INTER AMERICAN UNIVERSITY

Mata de Plátano Field Station

500 John W. Harris Rd.

Bayamón, P.R. 00957

E-mail: arodriguez@bayamon.inter.edu

CURRICULUM VITAE

DEGREES AND INSTITUTIONS

Ph.D., Boston University, Boston

M.S., University of Puerto Rico, Mayagüez

B.S., University of Puerto Rico, Mayagüez

SOCIETY MEMBERSHIPS

American Association for the Advancement of Science

(President 2004-2006, Caribbean Division)

North American Society for Bat Research

(Board member 2007- 2013)

Red Latinoamericana para la Conservación de Murciélagos

(Board Member 2013 – 2015; Coordinator of Puerto Rico Chapter)

POSITIONS HELD

2015-Present	Full Professor and Director of Mata de Plátano Field Station InterAmerican University, Bayamón, P.R.
2006-2015	Dean of Research and Full Professor; InterAmerican University, Bayamón, P.R. Also , Founder and Director of Mata de Plátano Field Station since 2001.
1998-2006	Dean of Arts and Sciences and Full Professor; Inter American University, Bayamón, PR.
1991-1998	Chairman, Dept. Natural Sciences; Inter American University, Bayamón, PR.
1992-1998	Associate Professor; Ecology, Evolution, Environmental Problems and Integrated Science Inter American University, Bayamón, PR.
1990-1991	Assistant professor; Inter American University, Aguadilla, PR.
1987-1990	Instructor (Lecturer); Ecology, Environmental Problems, Microbiology and Zoology; Inter American University, Aguadilla, PR.
1984-1986	Research Assistant (Physiological Ecology), Boston University
1981-1984	Teaching Fellow; Laboratory of Introductory Biology, Human Anatomy. Coordinator; Animal Parasitology. University of Puerto Rico, Mayagüez

CONTRACTS AND GRANTS

2017 – 2019	Bat species richness and diversity survey in Culebra National Wildlife Refuge. U.S. Fish and Wildlife Service, Funding Opportunity F17AS00253.
2017 – 2018	Importance of the IAUPR-BC wetland for bat conservation and citizen science education. Vicepresidencia de Asuntos Académicos

2012 -2015	Impact of habitat fragmentation on bat populations. In: Efficacy of Informal Science Education (ISE) practices to develop Hispanic citizen scientists in the watershed of the Rio Grande of Manatí, Puerto Rico. NSF Citizen Science Program and The Puerto Rico Conservation Trust. (Sub award).
2013 – 2014	Bat-use Study scope for proposed wind turbine sites at the Municipalities of Barceloneta and Loiza, Puerto Rico. Aspenall Energies, LLC (Subcontract).
2012 – 2013	Renovation of Mata de Plátano Field Station in the Karst Region of Puerto Rico, West Indies. NSF Award DBI-1226421.
2013 – 2015	Post-Construction Monitoring of Bat Fatalities at the Punta Lima Wind Farm. Punta Lima Wind Farm, LLC/ Gestamp Wind.
2007- 2011	The Role of Bats in the Reforestation of Disturbed Areas. NSF Citizen Science Program and The Puerto Rico Conservation Trust. (Sub award).
2010-2012	Evaluations of bat populations on potential wind farm sites. AMBIENTA (Subcontract).
1997- 2012	PR- NSF Alliance for Minority Participation. Resource Center for Science and Engineer (Funding for the development and supervision of undergraduate research).
2003-2006	Ecology and Management of Bats Roosting in Western Vieques. Evaluation for The Puerto Rico Conservation Trust.
2003	Environmental Evaluation of Cuevas de Aguas Buenas Area: Determination of Species of Bats Present. Servicios Técnicos y

2001- 2005	Title V, Developing Hispanic-Serving Institutions. U. S. Department of Education. Co-PI, Project-Based Learning in Biology.
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2000	Improvement of the Karst Forest's Mata de Plátano Field Station. NSF Award No. DBI-0085342.
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1988	Research Grant. Research Institute, Inter American University of Puerto Rico.
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1986	Grant-in-Aid of Research, American Society of Mammalogists Grant-in-Aid of Research, Sigma XI Society, Boston U. Chapter

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Rodríguez-Durán, A. and K. Christenson. 2012. *Breviario sobre los Murciélagos de Puerto Rico, La Española y las Islas Vírgenes*. Universidad Interamericana de Puerto Rico y Publicaciones Puertorriqueñas, San Juan.

Rodríguez-Durán, A. and N. Murray-Irizarry. 2013. *Una historia en dos tiempos*. Ediciones SM y Universidad Interamericana de Puerto Rico.

Rodríguez-Durán, A. *Accepted*. *El vino y la aventura de saber*. EDP University Press, San Juan.

OTHER PUBLICATIONS

Rodríguez-Durán, A. 2000. Noche, Sutil Maravilla: Los Murciélagos del Túnel Negro. *Alborada Cultural*, 5:15.

Rodríguez-Durán, A. 2002. The Karst Province of Puerto Rico: Confluence of Science, Technology, Economic Development, and Conservation. *Dimensión*, 16:19-21.

Rodríguez-Durán, A. 2002. Los murciélagos en las culturas precolombinas de Puerto Rico. *Focus*, I (2): 15 – 18.

Rodríguez-Durán, A. 2003. La “Educación General” en Puerto Rico y algunas divagaciones sobre coquíes, taínos y chupacabras. *Focus*, II(1): 61-68.

Rodríguez-Durán, A. 2003. Los vampiros y la pseudodoxia epidémica. *Focus*, II (2): 43-52.

Miranda-Maldonado, E., R. R. Canales-Pastrana, and A. Rodríguez-Durán. 2004. Computer code to simulate bat movements and its role in the formation of roosting assemblages. *Focus*, 3(1): 7-12.

Rodríguez-Durán, A. 2004. Para no perder el paso al siglo XXI: El rol de la universidad y del país. *Focus*, 3(1): 43-50.

Rodríguez-Durán, A. 2004. La raza asimétrica: Una definición del hispano y sus implicaciones para “the melting pot”. *Focus*, 3(2): 65-72.

Rodríguez-Durán, A. 2015. La temperatura del vino en el trópico. *Corks Magazine*. Vol 1. Primera Edición.

SYNERGISTIC ACTIVITIES

- Fundación Museo de Historia Natural de Puerto Rico. Consultant for the development of the Museum of Natural History (pro bono, 1997 – 2000). The Foundation of the museum of natural history was a non-profit group working with the local government to establish a quality museum in Puerto Rico.
- International Institute of Tropical Forestry’s Karst Group. This group consisted of an interdisciplinary team from federal and state agencies, academia, and environmental groups. The aim is to establish a large unfragmented reserve along the northern karst province of Puerto Rico. (2009)

– Activity Director of development of faculty competencies in technology and student centered learning to improve student academic outcomes. A Department of Education Title V project (2001 – 2006) for the standardization and enhancement of science gateway courses.

– Series of short stories for kids. Works with the authors and the illustrators to provide scientifically and visually correct images. Author of a section in each publication. The intention with these publications is to provide young readers not only good literature, but information on the natural history of their surroundings, dispelling some myths, and raising environmental awareness. “Cuentos del Carso” (2002, Zulma Ayes, author. Published by Alfaguara); “Un murciélago amigo que vive en las cavernas” (2003, Blanca Berio, author. Publisher by Editorial Río Ingenio and by Editorial Norma); Canito el murciélago pescador (**2014**, Z. Ayes, autor, Published by SM). Activities related to the Bat Conservation Program of Puerto Rico, part of the Latin American Network for Bat Conservation.

ABSTRACTS (Selected)

2017	Climate change and the impact of hurricanes on bats in small islands. IBS Climate Change Biogeography, Evora, <u>Portugal</u> , 20 -24 March.
2013	Current status of wind farms in Latin America and its relation with bat research and conservation. 16 th International Bat Research Conference, <u>Costa Rica</u> , 11 – 15 th August.
2012	<i>Artibeus jamaicensis</i> in Puerto Rico vs Costa Rica: Support for the Metabolically Conservative Species Hypothesis. 42 nd North American Symposium on Bat Research, <u>San Juan</u> , October 24 – 27, 2012.
2010	Metabolic rates, nutritional state, and thermoregulatory behavior of <i>Molossus</i> . 15 th International Bat Research Conference, <u>Prague</u> , August 23 – 27.

2007	The importance of caves for bat assemblages in the West Indies. 3 rd International Biogeography Society Conference, <u>Tenerife</u> , Spain, January 9-13.
2004	Bat assemblages in the West Indies: The role of caves. Symposium on Ecology, Evolution and Conservation of Island Bats (invited contribution). ATBC 2004, <u>Miami</u> .
2001	Oxygen Transport and Wing Morphology of Antillean bats. 31 st North American Symposium on Bat Research. Victoria, <u>Canada</u> .
1998	Renal structure of bats in Puerto Rico. 11 th International Bat Research Meeting, Pirenopolis, <u>Brazil</u> .
1995	Bat predation by the Puerto Rican boa: Foraging ecology, carrion feeding, and piracy. Joint meeting of the 25 th North American Symposium on Bat Research and the 10 th International Bat Research Conference, <u>Boston</u> , USA.
1994	Population estimate in a complex bat colony. 24 th North American Symposium on Bat Research. Ixtapa, <u>México</u> .
1992	Patterns of use and association among Antillean cave dwelling bats. 9 th International Bat Research Conference. Madurai Kamaraj, Madurai, <u>India</u> .
1989	Comparative physiological ecology of bats roosting in hot-caves. 8 th International Bat Research Conference. University of New South Wales, Sydney, <u>Australia</u> .
1987	Food habits and skull morphology of Antillean insect-eating bats. 67 th Annual Meeting of the American Society of Mammalogists. University of <u>New Mexico</u> , Albuquerque.
1985	Feeding ecology of three species of bats from western Puerto

Rico. 67th Annual Meeting of the American Society of Mammalogists. University of Maine, Orono.

1983 Merlin predation on insectivorous bats (In Spanish). 5th Symposium on the Fauna of Puerto Rico and the Caribbean. University of Puerto Rico, Humacao, Puerto Rico.

DIRECTED STUDENT RESEARCH (Selected)

Undergraduate

Yarisa Montes. Skull morphology of Antillean bats (Co-directed with Allen R. Lewis, UPR-Mayagüez). 1987.

Carolyn Parra and Glorimel Pérez. Ecological assessment of sector Mata de Plátanos, Arecibo. (Co-directed with Francisco Marciano-Santiago, UIPR-Bayamón). 1992.

Juan Fernández. A technique to estimate population size of bats in complex roosts. 1994.

Bert Rivera. Comparative analysis of the renal structure of bats. 1997 to 1998.

Rafael Vázquez. Foraging ecology of the fruit eating bat Artibeus jamaicensis. 1997-2000.

Nancy Cintrón. Social Structure of Artibeus jamaicensis using PCR. 1997-1999.

Larisa Archilla and Dérlim Bravo. Bucal microbiota of bats. (Co-directed with José Pérez-Jiménez, UIPR-Bayamón). 1997-2000.

Julio Soto-Centeno. Temperature preferences of bats roosting in hot-caves. 1998 to 2001.

Manuel Soto. Bat activity in urban areas. 2003 – 2004.

Jesus M. Ríos and Viviana Negrón. Temperature selection by the bat *Molossus molossus*. 2004 – 2007.

Emmanuel Miranda-Maldonado and Wilmarie Torres-Rivera. Computer simulation of bat movements: Importance in understanding roosting assemblages and conservation strategies. 2003 – 2006.

Jean Manuel Sandoval, Jansel Pérez and Mari Ana Montalbán. Cat predation on bats. 2006 – 2008.

Jean M. Sandoval. Metabolic rates of bats. 2008 – 2011.

Wilkins Otero. Seed dispersal by bats. 2009 – 2011.

Erik Calderón and Waldemar Feliciano. Impact of wind farms and habitat fragmentation on bat populations. 2012 – 2015.

Lynnette Andujar. Energetics of bats on islands. 2013 – 2015.

Natalie A. Nieves and Valeria Tirado. Importance of wetlands for bat conservation. 2016 – present.

Graduate

Wilmarie Cruz (M.S. student). Impact of urban development and environmental disturbance on bat diversity and abundance. (Inter American University – San German).

Glorinell Pérez (M.S. student). Ecology of introduced monkeys in northern Puerto Rico (Inter American University – Bayamón).

Committee member (not as major advisor)

Ramón López-Rosado (M.S. student). Population Genetics Studies in Bats. (UPR-Mayagüez).

Bert Rivera-Marchand (M.S. student). Reproductive biology of columnar cacti pollinated by bats. (UPR-Río Piedras).

Carlos Conde Costas (PhD student). UPR – Río Piedras.

Ashley RhoIf (MS student). Ecology of mormoopid bats in Puerto Rico. Eastern Michigan University.

SESSION LEADER AND WORKSHOPS

Lecturer and Session Leader – 9th International Bat Research Conference. Madurai, India (1992).

Workshop Leader – Ecological methods for the study of tropical bats. 10th International Bat Research Conference, Boston (1995, post-conference workshop in Puerto Rico).

Host/Organizer – 42nd North American Symposium on Bat Research. San Juan, Puerto Rico (2012).

EDITORIAL REVIEWS

Reviewer for the journals: Biotropica, Caribbean Journal of Science, Journal of Mammalogy, Acta Chiropterologica, Caribbean Naturalist, and the National Science Foundation. Editorial Board of Focus, a multidisciplinary journal, Interesante, a magazine of the Bayamón Campus, and Caribbean Naturalist.

COMMUNITY SERVICE

Board of Directors, Residents Association, Urb. Parque San Miguel (1996-1998).

Fundación Museo de Historia Natural de Puerto Rico (consultant for the design of the Museum of Natural History, 1997-2000).

Ciudadanos del Karso (Environmental organization). Scientific Advisor, 1998-Present.

Bat Conservation International. Review Board. 2000- Present.

Department of Natural Resources and Environment of Puerto Rico. Advisory Board to the Secretary on matters of wildlife, 2001 – Present.

Municipality of Caguas, Advisory Board on Science of Technology, 2006.

AWARDS AND COMMENDATIONS

2009	International Institute of Tropical forestry US Forest Service Science Award "In recognition of long term research on bats"
2008	IUCN Global Mammal Assessment: Small mammals of Mesoamerica, México and the Caribbean, Centro Zamorano de Biodiversidad, Honduras. Member of the Chiroptera Specialist Group, Species Survival Commission.
2006	NSF's Committee of Visitors to Evaluate the Program of Environmental Sciences.
2002	United Who's Who Registry.
2002	U. S. Forest Service New Century of Service Award (as part of the International Institute of Tropical Forestry's Karst Group).
2002	Dedication of the 22 nd Symposium on Wildlife. Sacred Heart University, San Juan, Puerto Rico.
1992	Dedication of the 7 th Initiation Ceremony; Students Techno-Scientific Association, Inter American University at Bayamón, Puerto Rico.
1989	Exceptional Merit Award Inter American University of Puerto Rico (One faculty member was selected at each campus based on his/her performance in teaching, service to the University,

community service and research; a cash prize accompanied the award).

HOBBIES

Sea-Kayaking, snorkeling, beer brewing, literature, and history.

MISCELANEOUS

- Field experience with bats in Australia, Brazil, India, New England, México, Panamá, Malaysia, Costa Rica and Dominican Republic.
- Some research experience with reptiles, insects, nectar-feeding birds, and estuaries.
- Founder and director Mata de Plátano Field Station, a research and educational center in the karst region of northern Puerto Rico.
- Founder: Programa de Conservación de Murciélagos de Puerto Rico (Program for the Conservation of Bats of Puerto Rico), a program affiliated to the Latin American Network for the Conservation of Bats (RELCOM, in Spanish).

REFERENCES

Michael Willig, University of Connecticut, michael.willig@uconn.edu.

Allen Kurta, Eastern Michigan University, akurta@emich.edu.

Juan Martínez, Universidad Interamericana, jmartinez@bayamon.inter.edu.

APPENDIX B

Task Field Map







APPENDIX D

PUERTO RICO DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES AND U.S. FISH AND WILDLIFE SERVICE CORRESPONDENCE

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Pett, Sam

From: Rivera, Marelisa <marelisa_rivera@fws.gov>
Sent: Wednesday, December 16, 2020 1:56 PM
To: Pett, Sam
Cc: Muniz, Edwin; Cruz-Burgos, Jose; Nilda Jimenez
Subject: Re: [EXTERNAL] Conducting bat surveys in Puerto Rico

Dear Sam:

Bats in Puerto Rico are not listed under the ESA, therefore no federal permits / protocols for surveys are required or needed. Please contact Dr. Nilda Jimenez for any permits required by the Puerto Rico Department of Natural and Environmental Resources.

Thanks

Marelisa

Marelisa Rivera
Deputy Field Supervisor
U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
P.O. Box 491 / Road 301, Km 5.1
Boquerón, Puerto Rico 00622

(787) 851-7297 x 206 (direct)

(787) 851-7440 (fax)

(787) 510-5207 (mobile)

Email: marelisa_rivera@fws.gov

OFFICE HOMEPAGE: <https://www.fws.gov/southeast/caribbean/>

FACEBOOK: <https://www.facebook.com/USFWSCaribbean>

FLICKR: <https://www.flickr.com/photos/usfwssoutheast/sets/72157626859158391/>

There are three constants in life...change, choice and principles.

Stephen R. Covey

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Muniz, Edwin <edwin_muniz@fws.gov>
Sent: Wednesday, December 16, 2020 1:22 PM
To: Rivera, Marelisa <marelisa_rivera@fws.gov>; Cruz-Burgos, Jose <jose_cruz-burgos@fws.gov>
Subject: Fw: [EXTERNAL] Conducting bat surveys in Puerto Rico

Edwin E. Muñiz

Field Supervisor
Department of the Interior
U.S. Fish and Wildlife Service
Caribbean ES Field Office
Office: (787) 851-7297 Ext. 204
Cell: (787) 405-3641
Fax: (787) 851-7441

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.

From: Pett, Sam <Sam.Pett@tetrattech.com>
Sent: Wednesday, December 16, 2020 12:03 PM
To: Muniz, Edwin <edwin_muniz@fws.gov>
Subject: [EXTERNAL] Conducting bat surveys in Puerto Rico

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Mr. Muniz:

I am inquiring about seasonal restrictions on conducting bat surveys in Puerto Rico and any guidance related to conducting such surveys.

I am in Virginia and have worked on numerous projects in the continental United States that involved presence/absence surveys for T&E species of bats, and am familiar with the USFWS Range-Wide Indiana Bat Survey Guidelines that require surveys to be conducted from May 15 to August 15. Is there a similar time period restriction for conducting surveys in Puerto Rico, or perhaps a requirement that separate surveys be conducted at different times to target individual or different groups of species?

Any information you could provide that would help me would be appreciated.

Thank you.

Sam Pett
Tetra Tech | Fairfax, VA
sam.pett@tetrattech.com

Pett, Sam

From: Cruz-Burgos, Jose <jose_cruz-burgos@fws.gov>
Sent: Wednesday, December 16, 2020 1:54 PM
To: Pett, Sam
Cc: Muniz, Edwin; Rivera, Marelisa
Subject: Re: Conducting bat surveys in Puerto Rico

Hello Sam,

We do not conduct recovery work with bats here in Puerto Rico because none of the species are federally listed. I do recommend you contact the Dr. Nilda Jimenez (njimenez@drna.pr.gov) and Biologist Ramon Rivera (rlrivera@drna.pr.gov) from the PR Department of Natural and Environmental Resources as all bat species are protected under local laws and regulations and some are even listed under their threatened and endangered species regulation. Thus, they may provide you with some guidance and recommend local experts that can help you.

Thanks,

jo

--

José A. Cruz-Burgos
Threatened and Endangered Species Program Coordinator
U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
P.O. Box 491
Boquerón, P.R. 00622

E-mail: jose_cruz-burgos@fws.gov

Phone: 787-851-7297, ext. 218

Fax: 787-851-7440

Mobile: 787-510-5206

<http://www.fws.gov/southeast/caribbean>

FACEBOOK: <https://www.facebook.com/USFWSCaribbean>

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Sam Pett
Tetra Tech | Fairfax, VA
sam.pett@tetrattech.com

Pett, Sam

From: Nilda M. Jimenez Marrero <njimenez@drna.pr.gov>
Sent: Thursday, December 17, 2020 5:29 AM
To: Pett, Sam
Cc: Ramon L. Rivera Lebron; Marilyn Colon Negrón
Subject: RE: [EXTERNAL] Conducting bat surveys in Puerto Rico

Hello Mr. Sam,

For conducting any research in PR with wildlife you need a research permit from DNER. We don't have a particular period restrictions. As part of the permit process we will evaluate the proposal you submit. Other researchers working with bats have submitted particular protocols to follow to prevent COVID. If you have further questions you could contact me again or the Office of Permits, Marilyn Colon, copied in this message

From: Rivera, Marelisa [mailto:marelisa_rivera@fws.gov]
Sent: Wednesday, December 16, 2020 2:56 PM
To: Sam.Pett@tetrattech.com
Cc: Muniz, Edwin <edwin_muniz@fws.gov>; Cruz-Burgos, Jose <jose_cruz-burgos@fws.gov>; Nilda M. Jimenez Marrero <njimenez@drna.pr.gov>
Subject: Re: [EXTERNAL] Conducting bat surveys in Puerto Rico

Dear Sam:

Bats in Puerto Rico are not listed under the ESA, therefore no federal permits / protocols for surveys are required or needed. Please contact Dr. Nilda Jimenez for any permits required by the Puerto Rico Department of Natural and Environmental Resources.

Thanks

Marelisa

Marelisa Rivera
Deputy Field Supervisor
U.S. Fish and Wildlife Service
Caribbean Ecological Services Field Office
P.O. Box 491 / Road 301, Km 5.1
Boquerón, Puerto Rico 00622

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Email: marelisa_rivera@fws.gov

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FACEBOOK: <https://www.facebook.com/USFWSCaribbean>

FLICKR: <https://www.flickr.com/photos/usfwssoutheast/sets/72157626859158391/>

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Subject: Fw: [EXTERNAL] Conducting bat surveys in Puerto Rico

Edwin E. Muñiz
Field Supervisor
Department of the Interior
U.S. Fish and Wildlife Service
Caribbean ES Field Office
Office: (787) 851-7297 Ext. 204
Cell: (787) 405-3641
Fax: (787) 851-7441

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I am in Virginia and have worked on numerous projects in the continental United States that involved presence/absence surveys for T&E species of bats, and am familiar with the USFWS Range-Wide Indiana Bat Survey Guidelines that require surveys to be conducted from May 15 to August 15. Is there a similar time period restriction for conducting surveys in Puerto Rico, or perhaps a requirement that separate surveys be conducted at different times to target individual or different groups of species?

Any information you could provide that would help me would be appreciated.

Thank you.

Appendix E
Federal Consistency Determination

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**Puerto Rico Coastal Zone Management Program
Federal Consistency Determination of
Short-term Construction Projects at
The 141st Air Control Squadron of The Puerto Rico Air National Guard
Punta Borinquen Geographically Separated Unit
Aguadilla, Puerto Rico**



Prepared for:

**Puerto Rico Air National Guard
141st Air Control Squadron
Aguadilla, Puerto Rico**

June 2022

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Construction and Demolition Projects	2
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Puerto Rico Coastal Zone Management Program Federal Consistency Determination of Short-term Construction Projects at The 141st Air Control Squadron of The Puerto Rico Air National Guard Punta Borinquen Geographically Separated Unit Aguadilla, Puerto Rico

This document provides the Commonwealth of Puerto Rico with the Puerto Rico Air National Guard (PRANG) Federal Consistency Determination under Coastal Zone Management Act of 1972 Section 307 (16 U.S.C. § 1456) and 15 CFR Part 930 Subpart C for short-term construction projects at the Punta Borinquen geographically separated unit (GSU) in Aguadilla, PR. The information in this Federal Consistency Determination is provided pursuant to 15 CFR § 930.39. The first section of the document describes projects included in the federal Proposed Action. The second section presents the results of the PRANG's evaluation of the enforceable policies of the Puerto Rico Coastal Zone Management Program (PRCZMP) and the federal activity's consistency with them.

BACKGROUND

The Punta Borinquen GSU of the 156th Wing (156 WG) is home of the 141st Air Control Squadron (141 ACS). It occupies approximately 6.5 acres on the west side of Puerto Rico Route (PR-) 107, west of Rafael Hernández Airport (formerly Ramey Air Force Base) in the Municipality of Aguadilla, PR. The Punta Borinquen GSU is at the furthest inland extent of the Puerto Rico Coastal Zone.

Purpose of and Need for Action

The Proposed Action is to implement various short-term construction, demolition, renovation, and repair projects for the 141 ACS in Aguadilla, PR. The purpose of the Proposed Action is to provide the 141 ACS with the facilities, infrastructure, and level of readiness required to accomplish its mission. The Proposed Action is needed to enable the 141 ACS to maintain the level of readiness required for its mission. The 141 ACS's mission is to provide personnel and equipment to meet the needs of the Department of the Air Force Air Combat Command. The unit provides counterair operations support, early warning surveillance, and data link and gap filler; and supports contingency operations and drug interdiction within the Caribbean region. All proposed projects would meet the purpose of and need for the Proposed Action. The period required to implement the projects is approximately 5 years.

Proposed Action

Under the Proposed Action, the 141 ACS would implement construction, demolition, renovation, and repair projects at selected locations on the Punta Borinquen GSU. Implementing the Proposed Action would not appreciably change operations at the GSU and would create no new permanent jobs. This section describes the proposed projects.

Construction and Demolition Projects

One construction project at the GSU would add approximately 2,100 square feet (SF) of new building and impervious surface on previously disturbed land and one demolition project would remove facilities.

Remove Underground Storage Tanks (USTs) and Associated Equipment (Project No. 1, TKWR¹212302). This project would remove an approximately 1,950-SF concrete pad, a fuel pump, and two USTs—a 10,000-gallon diesel fuel tank and a 3,000-gallon gasoline tank. The concrete pad covers the two USTs. The facilities are north of Building 11 on the west boundary of the GSU. All utilities serving the site would be removed or capped. If the USTs contain any fuel, they would be emptied in accordance with applicable regulations.

Construct a Weapon System Facility (Project No. 2, TKWR182304). This project would construct an approximately 2,100-SF Weapon System Facility on the concrete area northwest of Building 33. Facility construction would include installing environmental control unit connections, heating and cooling systems, lighting, and fire detection and alarm systems. The new Weapon System Facility would support a transition from a legacy weapon system to a modern weapon system. The new weapon system is required so military personnel can train to support their mission. The change in the system is an upgrade of the computer system and servers. Operations using the new system would be similar to using the current system.

The PRANG has two alternative sites for constructing the Weapon System Facility. The first alternative site is behind and southeast of Building 1, which is a previously disturbed but grassed area. Constructing the Weapon System Facility at this location would create additional impervious surface and require removing or relocating small utility units. The second alternative site is west of Building 1. Constructing the Weapon System Facility at that location would require demolishing Building 32 but would add no new impervious area.

Constructing the Weapon System Facility northwest of Building 33 is the Preferred Alternative.

Renovation and Infrastructure Repair Projects

Four projects involve renovation or infrastructure repair.

Upgrade the Main Gate (Project No. 3, TKWR222302). This project involves reconstructing the gate facility to comply with Department of Defense (DoD) antiterrorism and force protection (AT/FP) requirements. The existing gate does not comply with current AT/FP requirements.

Renovate the Main Building (Building 1) (Project No. 4, TKWR222301). This project would make safety and cosmetic renovations to Building 1. The PRANG would replace ceiling tiles, doors, floors, and walls; repaint the building; and make other cosmetic repairs. The use of the building and its footprint would not change. A portion of the approximately 38,000-SF building was completely remodeled in 1978 and could contain lead-based paint. The PRANG would test for and abate any lead-based paint found in the facility.

Repair and Reseal Parking Lots and Roads (Project No. 5, TKWR222303). This project would repair approximately 3,200 SF of deteriorated pavement on the base. Several roads and parking lots on the Punta Borinquen GSU are in poor condition from being used mostly by heavy

¹ PRANG project number (TKWR followed by 6-digit number).

equipment. Repairs would be made to ensure the longevity of the surfaces and reduce the risk of vehicle damage and personnel injuries.

Remove the Radar Dome and Reroof Building 7 (Project No. 6, TKWR232301). This project would remove the existing Radar Dome on Building 7 and replace it with a new flat roof. The PRANG would disassemble and remove the Radar Dome using high-reach heavy equipment. The dome would be disposed of following National Guard Bureau guidance. The PRANG would then construct a new flat roof on the building.

The PRANG has determined that the proposed projects would affect the land or water uses or natural resources of the Commonwealth of Puerto Rico in the following manner:

- The effects are detailed in Section 3.0 of the attached Environmental Assessment (EA).

PUERTO RICO COASTAL ZONE MANAGEMENT PROGRAM FEDERAL CONSISTENCY ANALYSIS

This section discusses the applicable enforceable policies contained in the PRCZMP with which the Proposed Action would be consistent.

The public policies established in the PRCZMP are applicable to the geographic, land, and maritime areas determined to be the *coastal zone* of the Puerto Rican archipelago. The coastal zone is not a separate entity from the rest of Puerto Rico. For this reason, the Puerto Rico Planning Board (PRPB) adopted the PRCZMP as the “coastal element” of Puerto Rico’s Land Use Plan (PRLUP) in 1978. The PRCZMP of 1978 incorporated the objectives and public policies of the PRLUP and, with that action, established a uniform public policy framework for the management of all natural resources, including those in the coastal zone. In 1995, the PRPB revised and adopted a new version of the objectives and public policies of the PRLUP, which is cited in this section.

Public Policy Goals and Objectives Regarding Urban Development

1.00 Order and manage urban areas’ physical-spatial growth.

2.00 Intensify the use of land in urban areas.

3.00 Improve the design of communities, towns and cities and that of their different components, traditional urban centers, businesses, institutions, and residences in order to turn them into an instrument that can improve the inhabitants’ quality of life and allow them to become attractive places to live and work, and foster social coexistence.

4.00 Foster an integral planning process that translates to a better use of land resources, preserving natural resources, revitalizing urban centers, protecting the quality of the environment and providing housing and associated services to the population at a reasonable cost in constant coordination between central, regional, and municipal planning.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with PRLUP urban development policy goals and objectives. The policy goals and objectives do not apply to the Punta Borinquen GSU projects because the projects would not occur in an urban area, do not involve community design, and would have no effect on any urban area’s physical-spatial growth.

Public Policy Goals and Objectives Regarding Industrial Development

5.00 Concentrate industrial developments in land that is most appropriate for this use and at the same time promote the most intensive use possible for this land.

6.00 Decentralize industrial development by providing, as much as possible, a light industrial park in each municipality, regional parks on the Island's different sectors, and allowing, in rural zones, small-scale industries that are in tune with the rural zone's socioeconomic development.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with PRLUP industrial development policy goals and objectives. The policy goals and objectives do not apply to the Punta Borinquen GSU projects because the projects would not involve industrial development.

Public Policy Goals and Objectives Regarding Agricultural Development

7.00 Encourage and maintain agriculture as a main activity in the use of available land with the potential for this use, promoting the necessary programs and measures to make this a feasible activity.

8.00 Locate the development of required infrastructure to stimulate and foster farming in lands with agro-industrial potential that are not being fully exploited due to lack of services such as: irrigation, access, marketing system, and others.

9.00 Retain for agricultural use as much as possible the land that is better suited for the production of harvests and animal products, protecting it from the practices and activities that unnecessarily abate the potential for agricultural development.

10.00 Promote the practice of measures and programs geared toward land preservation so as to avoid erosion, protect the land's productivity, and cause the least adverse impact on the quality of our water supplies and the deterioration of other natural resources as a result of a agricultural activity.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with PRLUP agricultural development policy goals and objectives. The policy goals and objectives do not apply to the Punta Borinquen GSU projects because the projects would not occur on agricultural land. The PRANG would develop and implement an Erosion and Sedimentation Control Plan as part of the Consolidated General Permit it would obtain through the Puerto Rico Permit Management Office and would comply with federal requirements under the Federal 2022 Construction General Permit issued by the U.S. Environmental Protection Agency (EPA) (Permit No. PRR100000). Coverage under that permit requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP).

Public Policy Goals and Objectives Regarding Tourism

11.00 Promote tourism as an essential economic activity for a sustainable economic development process.

12.00 Promote, stimulate, and establish tourism incentives to bring about capital investments from local and foreign companies.

13.00 Promote Puerto Rico's image as a tourism destination.

14.00 Promote tourism development by improving the quality of touristic facilities.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with PRLUP tourism policy goals and objectives. The policy goals and objectives do not apply to the projects because the GSU is not open to tourism.

Public Policy Goals and Objectives Regarding Risk Due To Natural Disasters

15.00 Identify risks of flooding, landslides, geological faults, and swells in regional plans, ordinance plans, and other physical planning documents.

16.00 Protect the population currently residing in flood susceptible zones or in areas affected by swells.

17.00 Discourage land development and construction of properties for urban expansion in flood zones unless they are providing flood control works that guarantee the protection of life, property, and natural and environmental resources.

18.00 Promote agricultural development in flooding areas with a potential for said use.

19.00 Support the construction of flood control works where deemed necessary, aimed at obtaining a better agricultural production for the Island's benefit.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with PRLUP policy goals and objectives regarding risk due to natural disasters (policy goals 15.00 and 17.00). The Punta Borinquen GSU is at the furthest inland extent of the Puerto Rico Coastal Zone and flooding and swells do not occur on the GSU.

No one resides on the Punta Borinquen GSU (Policy Goal 16.00), and the Punta Borinquen GSU does not support agriculture (policy goals 18.00 and 19.00).

Public Policy Goals and Objectives Regarding Infrastructure

20.00 Promote infrastructure to solve the relative potable water shortage and stimulate efficient management of this water resource so as to improve quality of life.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 20.00 and its objectives. The PRANG would use only water-efficient fixtures in new and renovated facilities. Those facilities would be designed in accordance with the DoD Unified Facilities Criteria 1-200-02, *High Performance and Sustainable Building Requirements*.

21.00 Satisfy the needs of the population by providing a residual water treatment plant infrastructure with the capacity to offer an efficient service.

22.00 Direct electrical energy infrastructure so it stimulates and favors an energetic policy geared to cogeneration and diversification of energy production.

23.00 Promote a transportation system that fosters the implementation of an integrated balanced and competitive multi-modal system with a capacity for growth and development.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with policy goals 21.00–23.00 and their objectives. The goals and their objectives do not apply to the GSU projects.

24.00 Promote the implementation of management and solid waste disposal systems that include a detailed and extensive inventory of the amount of this type of waste generated on the Island.

25.00 Develop a plan for handling and disposing toxic and dangerous waste that includes a detailed and extensive inventory of the amount of toxic waste generated on the Island and the location of centers for the recovery, recycling and disposal of this type of waste.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with policy goals 24.00 and 25.00 and their objectives. The PRANG handles, stores, and disposes of all domestic, recyclable, and hazardous and toxic waste in full compliance with applicable regulations.

26.00 Promote a modern, reliable, wide and secure telecommunications infrastructure and a modern island-wide digital network that helps foster Puerto Rico's economic and social development.

27.00 Identify telephone service and its derivatives as one of the essential elements of Puerto Rico's infrastructure, so as to develop an economy and industry that is in tune with the present and the future.

28.00 Use programming and construction of the telecommunications infrastructure as an essential component in the land use planning that may guide integral development.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with policy goals 26.00–28.00 and their objectives. The goals and their objectives do not apply to the GSU projects.

Public Policy Goals and Objectives Regarding Natural, Environmental and Cultural Resources Areas

29.00 Protect, preserve and restore natural environmental and cultural resources.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 29.00 and its objectives. Natural environmental resources on the GSU are extremely limited and consist almost entirely of maintained lawn areas adjacent to buildings and some scattered landscaping trees. The new Weapon System Facility would be constructed on previously disturbed area or on an area of maintained lawn.

A cultural resources survey has been conducted on the Punta Borinquen GSU (see Section 3.3.1.1 of the EA). No archaeological resources were found, and no facilities surveyed were recommended as eligible for listing on the National Register of Historic Places. The PRANG has coordinated with the Puerto Rico State Historic Preservation Officer regarding the projects and would comply fully with Section 106 of the National Historic Preservation Act in undertaking the projects.

30.00 Protect natural, environmental and cultural resources from destruction or irreparable damages caused by inappropriate use or lack of vision to mitigate adverse impact caused by other activities.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 30.00 and its objectives. This section addresses the individual objectives of PRLUP Policy Goal 30.00.

30.01 Reduce pollution's negative impact on natural resources by identifying and controlling the causes and sources of pollution.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.01. The PRANG has developed numerous plans designed to protect environmental resources on all its properties on Puerto Rico, including a Hazardous Waste Management Plan, Asbestos Management Plan, Integrated Natural Resources Management Plan, and SWPPP. All plans are consistent with Puerto Rico and National Guard Bureau pollution control requirements and are implemented at all PRANG properties.

30.02 Control land development, construction, and lot division activities that could negatively affect the quality of waters, particularly in aquifers' recharge areas and in immediate basins of lakes and reservoirs, including, among others, activities such as excessive paving that increases the flow of runoff waters, indiscriminate use of fertilizers and pesticides that damage the quality of our water bodies, leveling, removal of topsoil, and movement of soil that causes erosion and sedimentation.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.02. Under the Preferred Alternative, no new impervious surface would be created and removal of the concrete pad covering the USTs would increase pervious ground by almost 2,000 SF. The PRANG would comply with Puerto Rico and DoD requirements for stormwater control to ensure that volumes and rates of post-construction stormwater runoff do not exceed preconstruction levels. All fertilizers, pesticides, and herbicides used on PRANG properties are applied by certified personnel and are used only as needed and in accordance with EPA application guidelines. All areas disturbed during construction would be revegetated using native species to minimize erosion.

30.03 Avoid activities that could deteriorate or destroy natural systems that are critical for preserving the environment, such as mangrove swamps, wetlands, forests, reefs, sinkholes, dunes, and habitats of endangered species.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.03. No environments of the types mentioned in the objective exist on the GSU. Project implementation would have no adverse effects on these resources.

30.04 Protect and preserve natural sinkhole areas, careful to avoid deviating runoff waters that flow toward them.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.04. The GSU is within the northern karst area of Puerto Rico, but no natural sinkholes are on or near the GSU. Areas with sinkholes with depths of 16–100 feet (5–30 meters) or more are located approximately 3.5 miles (5.6 kilometers) inland of the GSU.

30.05 Protect wetland areas by allowing uses that are compatible with the preservation and conservation of their natural state.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.05. No wetland areas exist on the GSU.

30.06 Demand that the development impacts in nesting areas are minimized through manipulation of lighting and building location.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.06. No beach areas or nesting areas are on or near the GSU.

30.07 Prevent that establishing new activities, or authorizing the division of lots, results in the unnecessary loss of resources' future use options, keeping in mind the following objectives, among others:

- Avoid uses near the reservoir collecting areas that generate pollution, waste disposal into the water, or erosion.
- Avoid negatively affecting the eventual use of water resources by authorizing activities or division of lots in places where new reservoirs may be built.
- Avoid underground water pollution by not approving harmful uses and activities in their collection areas.
- Preserve and improve the quality of waters by providing an adequate treatment of used waters and by minimizing land movement and controlling sedimentation and erosion. Avoid uses and activities capable of harming the sand resource and resources related to the coastal zone, estuary systems, and others.
- Avoid the construction of structures on beach areas and discourage activities or division of lots in adjoining lands which have the effect of preventing or hindering free access to them by promoting free access to their panoramic views, free access to the sun, and their enjoyment by all.
- Integrate and harmonize residential settlements (and other projects) with the existing natural environment by promoting reforestation and maintaining the harmony with natural features such as the vegetation and topography.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.07. The projects would not be sited near reservoir collecting areas, erosion and sedimentation would be controlled during construction in compliance with federal and Puerto Rico permits for stormwater control, no structures would be constructed on beach areas, access to beach areas would not be affected by the projects, and no residential areas exist on the Punta Borinquen GSU.

30.08 Avoid the demolition, mutilation, destruction, and deterioration of natural resources, archeological sites, and historic zones.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.08. No aspect of the projects would demolish, mutilate, destroy, or deteriorate a natural resource, archaeological site, or historic zone.

30.09 Reduce the negative impact of natural disasters and other activities on natural, environmental, and cultural resources by preparing and implementing mitigation plans.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Objective 30.09. No portion of the Punta Borinquen GSU is within a flood hazard area or subject to coastal swells or flooding. The PRANG would protect, preserve, and restore natural, environmental, and cultural resources damage caused by natural disasters in accordance with its management plans (see Policy Objective 30.01).

31.00 Foster protection of areas with karsts soil that due to calcareous formations and their hydrological characteristics, provide benefits to the aquifers, protect superficial waters, and maintain the ecological integrity of natural systems.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 31.00 and its objectives. See Policy Objective 30.04, above. The Punta Borinquen GSU is within the northern karst area of Puerto Rico, but no natural sinkholes are on or near it. Under the Preferred Alternative, impervious ground would increase by about 2,000 SF, which would improve any aquifer recharge that occurs in the region. The GSU has no natural surface waters, and, because it is highly developed, the land has little natural ecological integrity.

32.00 Develop control and management plans for aquatic and marine pollution by non-point sources of pollution associated to the categories of urban development, agriculture, construction and operation of marinas, hydromodifications and the destruction or alterations to wetlands.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 32.00 and its objectives. The PRANG has developed management plans for pollution control on its properties, including a Hazardous Waste Management Plan, Asbestos Management Plan, Integrated Natural Resources Management Plan, and SWPPP. All construction stormwater and soil erosion would be controlled in accordance with Puerto Rico and federal construction stormwater permit requirements. Nonpoint source pollution associated with agriculture, construction, and operation of marinas, hydromodifications, and the destruction of or alterations to wetlands is not applicable to the proposed projects.

33.00 Stimulate the preservation of land use in its natural state beyond the field of urban expansion or in rustic soil, granting additional recognition to their social and economic benefits and promoting mechanisms that adequately value such resources.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 33.00 and its objectives. The policy goal and its objectives do not apply to the projects. The Punta Borinquen GSU is a military installation used only for military purposes and land uses.

34.00 Develop plans for managing and preserving non-renewable resources (minerals) that guarantee environmental quality.

“Develop management and conservation plans for non-renewable resources (minerals) which guarantee environmental quality.” (See Public Policy 34.00)

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with Policy Goal 34.00 and its objectives. The policy goal and its objectives do not apply to the projects. No mineral resources are known to exist at the Punta Borinquen GSU.

The Punta Borinquen GSU projects would also be consistent with the following additional policies and criteria:

Policy on Special Protection for Mangroves

Avoid activities that could deteriorate or destroy natural systems that are critical for preserving the environment, such as mangrove swamps, wetlands, forests, reefs, sinkholes, dunes, and habitats of endangered species. (See Public Policy 30.03)

Consistency assessment: The proposed projects at the Punta Borinquen GSU are compatible with policies to protect the natural systems mentioned in the policy. No aspect of the proposed

projects would affect mangrove swamps, wetlands, forests, reefs, sinkholes, dunes, or habitats of endangered species.

Policy on Appropriate Access to Federal Beaches Hereafter Declared Surplus

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with the policy on appropriate access to federal beaches declared surplus. No aspect of the projects would affect a Puerto Rico beach area and no federal beach would be declared surplus as a result of the proposed project.

Policy on Public Access to Beaches

Avoid, that by the establishment of new activities or by lot authorization, the unnecessary loss of future use options of the resources, keeping, among others, the following objectives:

Avoid construction of buildings in beach areas and dissuade those activities or lot divisions in land contiguous to the beach which have an effect of impeding: free access to beaches, the free enjoyment of its scenery and the free access to the sun and enjoyment by all of the citizens.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with the policy on public access to beaches. No structure would be constructed on beach areas and no project would affect access to beach areas.

Criteria for diking, filling, dredging, and deposit of dredged sediments: All liquid waste discharges must comply with Federal and Commonwealth regulations. Federal and Commonwealth water quality standards, as well as all regulations and programs to achieve them, are incorporated into the PRCZMP.

Consistency assessment: The proposed projects at the Punta Borinquen GSU are consistent with the policy on diking, filling, dredging, and deposit of dredged sediments. No proposed project at the Punta Borinquen GSU would involve diking, filling, dredging, or the deposit of dredged sediments.

Policy on Sites for Coastal Dependent Development

The PRLUP establishes the following as one of its general goals:

Locate our industrial developments in strategic areas which permit the use of those lands which, due to their location, characteristics or the services and infrastructure already within them, best adapt to this use in harmony with the general objective of achieving the best possible use in order to take advantage of the potential of their natural resources, achieve a distribution of benefits of development between the municipalities and geographical sectors and create and maintain conditions under which man and nature can coexist in harmonious and productive manner.

Consistency assessment: The proposed projects at the Punta Borinquen GSU would comply with the PRCZMP policy to locate coastal-dependent industry along the coast. The projects would occur entirely on federal property and, therefore, would not affect the use of Commonwealth coastal areas reserved for coast-dependent industries.

Water Quality Standards adopted by the EQB: All liquid waste discharges must comply with Federal and Commonwealth regulations. Federal and Commonwealth water quality standards, as well as all regulations and programs to achieve them, are incorporated into the PRCZMP.

Consistency assessment: As part of obtaining coverage under the Federal Construction General Permit for stormwater discharges from construction activities through the EPA/ Caribbean Environmental Protection Division and under the Consolidated General Permit that the PRANG would obtain through the Puerto Rico Permit Management Office, the PRANG would obtain and provide a water quality certification to the Puerto Rico Department of Natural and Environmental Resources.