

STATEMENT OF WORK
A HABITAT-BASED MANAGEMENT FRAMEWORK FOR BROWN TREESNAKE
(*BOIGA IRREGULARIS*) CONTROL AND NATIVE SPECIES RECOVERY,
JOINT REGION MARIANAS
N40192-26-2-0001 ALN-12.300 07AUG2026

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Acronyms and Abbreviations

AFB	Air Force Base
AFPMB	Armed Forces Pest Management Board
AHA	Activity Hazard Analysis
AMS	Air Mobility Squadron
AOR	Area of Responsibility
APP	Accident Prevention Plan
BMP	Best Management Practices
BO	Biological Opinion
BTS	Brown Treesnake
CATR	Cooperative Agreement Technical Representative
CNMI	Commonwealth of the Northern Marianas
DoD	U.S. Department of Defense
DoN	U.S. Department of the Navy
EV	Environmental
ESA	Endangered Species Act
FTE	full-time employee
GIS	Geographic Information Systems
GO	Grants Officer
GPS	Global Positioning System
INRMP	Integrated Natural Resources Management Plan
JRM	Joint Region Marianas
MCBCB	Marine Corps Base Camp Blaz
NAVFAC	Naval Facilities Engineering Systems Command
NBG	Naval Base Guam
NLT	No Later Than
NMS	Naval Munitions Site
NTR	Navy Technical Representative
POAM	Plan of Action and Milestones
QA/QC	quality assurance/quality control
RSOI	Request for Statements of Interest
SOP	Standard Operating Procedures
SOW	Scope of Work
SSHO	Site Safety and Health Officer
SSHP	Site Safety and Health Plan
UFGS	Unified Facilities Guide Specifications
USGS	U.S. Geological Survey
USN	U.S. Navy
UXO	Unexploded Ordnance

A. INTRODUCTION

The invasive brown treesnake (*Boiga irregularis*; BTS) has inflicted catastrophic damage on Guam's native ecosystem, causing the widespread extinction and extirpation of native bird and reptile species. This ecological crisis poses a significant threat to neighboring islands and creates substantial challenges for the U.S. Department of Navy's (DoN) mission in the Joint Region Marianas (JRM) area of responsibility (AOR) by imposing costly conservation and interdiction requirements. Although programs exist to manage the snake population, they have not been implemented within a strategic, habitat-based framework. By integrating new site-specific control methods with a broader habitat management approach, the goal is to more efficiently suppress the snake population, foster the recovery of native species, and support the long-term sustainability of the JRM's conservation and mission-related objectives.

Statutory Authority:

The authority for this Cooperative Agreement (31 USC § 6305) is based on the Sikes Act: (16 USC 670a-670o, 74, Stat. 1052).

B. PURPOSE

The purpose of this Cooperative Agreement (hereafter: Agreement) is to:

- develop, implement, and manage a comprehensive Work Plan for the performance of all tasks detailed within this Scope of Work (SOW);
- develop and implement BTS and habitat-based management strategies and Standard Operating Procedures (SOPs) to suppress BTS populations and restore habitat for the recovery of federally and territorially listed species, ensuring no infringement upon military missions;
- determine the minimum thresholds of BTS suppression and habitat management activities required to support conditions conducive to native species persistence and recovery; and
- monitor native plant and wildlife populations to evaluate project efficacy and ensure their long-term protection and recovery.

C. LOCATION

The locations for the performance of this Agreement are found within the JRM-administered lands to include, Andersen Air Force Base (AAFB), Navy Base Guam (NBG), and other locations identified by the CATR.

D. DESIGNATED REPRESENTATIVES

1. The Chief Contracting Officer/Grants Officer (GO) is Mr. Eugene Diaz, Contracts Division Coordinator, Naval Facilities Engineering Systems Command Marianas, PSC 455, Box 195, FPO, AP 96540-2937; email address eugene.diaz@fe.navy.mil.
2. The Cooperative Agreement Grants Officer is Mr. Thelman M. Fontenot, Naval Facilities Engineering Systems Command, Marianas, PSC 455, Box 195, FPO AP 96540-2937; email address: thelman.fontenot@fe.navy.mil.
3. There are two (2) Cooperative Agreement Specialists:

- a. Ms. Jerica Santos, Naval Facilities Engineering Systems Command, Marianas, PSC 455, Box 195, FPO AP 96540-2937; email address: jerica.a.santos.civ@us.navy.mil, and
 - b. Ms. Nia Sereno, Naval Facilities Engineering Systems Command, Marianas, PSC 455, Box 195, FPO AP 96540-2937; email address: niamarie.b.serneo.civ@us.navy.mil
4. There are four (4) CO- Cooperative Agreement Technical Representatives (CO-CATRs) for this agreement:
- a. Mr. Franklin Alig, Natural Resources Specialist for Naval Facilities Engineering Systems Command, Marianas, Franklin.J.Alig.civ@us.navy.mil
 - b. Ms. Leanne Obra, Natural Resources Specialist for Joint Region Marianas, email address: leanne.e.obra2.civ@us.navy.mil
 - c. Ms. Laura Duenas, Natural Resources Specialist for Andersen Air Force Base, email address: laura_irene.duenas@us.af.mil
 - d. Ms. Ashley Toves, Natural Resources Specialist for Naval Base Guam, email address: ashleyjustine.f.toves.civ@us.navy.mil

The CATR(s) are responsible for ensuring that all work is performed pursuant to the requirements and specifications outlined in this Agreement, and that the work performed, including all written reports and professional services are of an acceptable technical quality. For this Agreement, the CATR(s) shall be the first and primary point of contact for the Recipient regarding any inquiries, questions, concerns, and issues related to the implementation of the requirements and specifications of this Agreement. The CATR(s) have no authority to make any changes to this Agreement, only the GO may affect any change to this Agreement.

E. PERIOD OF PERFORMANCE

The Government anticipates an initial period of performance (POP) for the Agreement to be twelve (12) months starting from the date of award. After completion of the initial period of performance, the total performance period may include up to four (4) option periods of twelve (12) months each dependent upon the availability of funds and the unilateral election of the Government to exercise an option to extend the term of the Agreement.

F. MATERIAL AVAILABLE FOR REVIEW

Recipient and/or his/her representative(s) will have access to the following materials through the CATR(s):

1. 2024 JRM Integrated Natural Resources Management Plan (INRMP)
2. 2021 Joint Region Marianas BTS Strategic Plan
3. Andersen Air Force Base Sali Monitoring Protocol
4. 2021 Plant and Invertebrate Survey, AAFB Tarague Basin Final Report
5. 2022 AAFB Informal Section 7 Consultation for Tarague 3 Ungulate Exclosure

6. 1992 USFWS Recovery Plan Mariana Common Moorhen
7. 2009 USFWS Draft Revised Recovery Plan for the Mariana Fruit Bat
8. All other relevant documents, papers, and reports pertaining to native and invasive species on the installations.

G. GENERAL REQUIREMENTS

1. The Recipient shall provide all labor, management, supervision, tools, materials, equipment, transportation, meals, and lodging for him/herself and his/her personnel. All Recipient equipment is subject to inspection and approval by the CATR(s).
2. The Recipient shall provide all equipment (unless otherwise stated) and analyses necessary to complete the work described within this Agreement. All data (raw and associated files), photographs, and equipment > \$5000 per unit in value and supplies > \$5,000 in aggregate value purchased with Agreement funds (including computer software) shall become the property of the U.S. Department of the Navy (DON) at the end of the Agreement. Equipment is defined as "tangible nonexpendable personal property including exempt property charged directly to the Agreement having a useful life of more than one year." Supplies are defined as "All personal property excluding equipment, intangible property, and debt instruments, and inventions of a contract or conceived or first actually reduced to practice in the performance of work under a funding agreement ("subject inventions"), as defined in 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements." (DoD Grant and Agreement Regulations, DoD 3210.6-R#)
3. The Recipient shall visit the study/project areas within the JRM AOR required to perform this Agreement as often as necessary and within the time limits stated below to accomplish the purposes of the Agreement as detailed further in this SOW. The Recipient will work with CATR(s) to acquire all required security and entrance clearances and camera passes for each employee working on this Agreement for any work on installations. The Recipient must comply with all security rules, regulations, requirements, and day-to-day operational changes thereto. Unannounced changes to day-to-day operational procedures may, at times, prohibit the Recipient access to study/project sites. While on the JRM installation, the Recipient shall abide by all applicable rules and regulations issued by the base installations located on DON property. The Recipient may be subject to inspections for contraband while on U.S. Government property.
4. The Recipient shall manage the total work effort and assure fully adequate and timely completion of services required under this Agreement. Included in this function shall be a full range of management duties including, but not limited to, planning, scheduling, inventory, analysis, quality control, and for meeting professional industry standards for conducting habitat management, biological surveys, and invasive species control.
5. The Recipient shall coordinate all field activities with the CATR to ensure approved methodology and protocols are followed and to minimize conflict with other research, restoration, and mission activities.
6. The Recipient shall submit a draft and final Accident Prevention Plan (APP) for Government review and comments. All Government comments, additions or revisions shall be incorporated into the final APP. The Government considers the Recipient to be the controlling authority for all work site safety and health of any party performing work on this Agreement. The Recipient is responsible for informing all parties performing work on the

Agreement of the safety provisions under the terms of the Agreement and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and for inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person who has authority to bind the firm) preparing the APP, the Recipient, the on-site superintendent, the designated site safety and health officer and any designated Certified Safety Professional (CSP) and/or Corporate Industrial Hygienist (CIH). Activity Hazard Analyses (AHAs) shall be updated as specified in the final APP.

7. Due to the complexity of work, the Recipient shall provide a total of eight (8) key personnel with the following minimum qualifications:

A. Principle Investigator (PI): Throughout the performance of the Agreement, one (1) PI shall be able to provide the required natural resources services. This person shall have, at the minimum:

- i. A doctoral degree in wildlife biology, botany, natural resources management, conservation biology, planning, or similar field with three (3) years of experience managing multiple concurrent projects as a senior scientist or project manager working with biological studies and any other environmental related work; Or a master's degree with a minimum of six (6) years of experience managing multiple concurrent projects as a senior scientist or project manager working with biological studies and any other environmental related work;
- ii. At least two (2) years of experience working in the Commonwealth of the Northern Mariana Islands (CNMI)/Guam or other Pacific Islands and a familiarity with invasive and native species research and conservation;
- iii. Experience ensuring compliance with the agreement terms and conditions, review of project documents to ensure product consistency, assigning personnel consistent with agreement requirements, and performing as the agreement's representative;
- iv. Experience ensuring management of natural resources with all applicable federal and local laws, regulations, their state counterparts, and other applicable or relevant and appropriate requirements; and
- v. Ability to provide technical oversight to a Project Manager, Habitat Management Specialist, Crew Leader, and Natural Resources Technicians.

B. Project Manager (PM): The Recipient shall designate one (1) person to ensure that provisions are in place for project and personnel supervision, quality control and meeting of reporting requirements on a daily basis. The PM's oversight of the project includes, but is not limited to, monitoring and controlling project costs, assigning personnel consistent with the agreement's requirements, and ensuring that information/data obtained for the project are of high quality and accurate. This person shall have, at the minimum:

- i. A Master's degree in biological sciences, natural resources management, planning, or similar related fields from an accredited four (4) year college/university or a bachelor's degree in biological sciences with appropriate work experience or additional education;
- ii. At least three (3) years of experience supervising and scheduling fieldwork for biologist and field technicians/crews;

- iii. The ability to obtain all local and federal permits and training required to conduct services, as required for each task under the Agreement; and
- iv. Their primary location on Guam.

C. Habitat Management Specialist (HMS): The Recipient shall designate, at minimum, one (1) person, to oversee the development and implementation of BTS and habitat-based management strategies for the recovery of protected species. The HMS will be responsible for developing SOPs for habitat-based management including, but not limited to, invasive plant and animal control, vegetation and wildlife monitoring, wildlife habitat enhancement, and ungulate fence maintenance. This person/these persons shall have, at the minimum:

- i. A Master's degree in biological sciences, natural resources management, planning, or similar related fields from an accredited four (4) year college/university or a bachelor's degree in biological sciences with appropriate work experience or additional education;
- ii. Specific knowledge of and at least two (2) years' experience in endangered and invasive species management and/or natural resources management in the Pacific Islands or island ecosystems. Preference will be given to those with experience in the CNMI/Guam or other Pacific islands and a familiarity with native species research and conservation;
- iii. Specific knowledge and experience in monitoring and controlling and/or developing protocols for the management of Guam/CNMI native and/or non-native species;
- iv. The ability to obtain all local and federal permits and training required to conduct services, as required for each task under the Agreement; and
- v. Their primary location on Guam with the ability to supervise the Crew Leader and Natural Resources Technicians in the field at various study/project areas within the JRM AOR.

D. Crew Leader (CL): The Recipient shall designate, at minimum, one (1) person to supervise a crew of four (4) Natural Resource Technicians in implementing BTS and habitat-based management activities for the recovery of protected species. This position will involve habitat-based management duties including, but not limited to, invasive plant and animal control, vegetation and wildlife monitoring, wildlife habitat enhancement, and ungulate fence maintenance. The designated individuals(s) may be hired after award with approval provided by the NAVFAC CATR. This person shall have, at the minimum:

- i. A bachelor's degree from an accredited four (4) year college or university in biological sciences, planning, natural resource management, forestry, botany, silvaculture, horticulture, wildlife biology, zoology or similar planning or science related field or have the equivalent experience in fieldwork;
- ii. One (1) year of work experience managing natural resources. Preference should be given to individuals with at least two (2) years of experience working in the natural resources field in Micronesia;
- iii. At least one (1) year of supervisory experience for a field crew;
- iv. Experience conducting fieldwork, accurately recording, maintaining, reporting on, and proofing data;

- v. Good physical condition, and capable of walking several consecutive miles while carrying gear and performing manual labor in a hot tropical environment on uneven terrain for multiple hours;
- vi. The ability to take photographs and collect samples of plants, insects, and animals for identification;
- vii. The ability to use a compass, maps, data tablets, and GPS;
- viii. A valid driver's license;
- ix. The ability to obtain all local and federal permits, and training required to conduct services, as required for each task under the Agreement; and
- x. Primary location on Guam.

E. Natural Resources Technicians: The Recipient shall designate, at minimum, four (4) personnel to implement BTS and habitat-based management activities for the recovery of protected species. This position will involve habitat-based management duties including, but not limited to, invasive plant and animal control, vegetation and wildlife monitoring, wildlife habitat enhancement, and ungulate fence maintenance. The designated individual(s) may be hired after award with approval provided by the NAVFAC CATR. This person shall have at the minimum:

- i. A bachelor's degree from an accredited four (4) year college or university in biological sciences, natural resource management, or a similar science related field; or a high school diploma or equivalent with appropriate field experience in the above biological sciences;
- ii. Experience conducting fieldwork, recording data accurately and data entry and proofing, including identifying and classifying plant and animal species;
- iii. Good physical condition, and capable of walking several consecutive miles while carrying gear and performing manual labor in a hot tropical environment on uneven terrain for multiple hours;
- iv. General knowledge of herbicide use, weed control techniques, and vegetation monitoring techniques;
- v. Experience maintaining scientific records of their observations in the form of field reports;
- vi. The ability to take photographs and collect samples of plants, insects and animals for identification;
- vii. Ability to use a compass, maps, and GPS;
- viii. A valid driver's license;
- ix. The ability to obtain all local and federal permits and training required to conduct activities, as required for each task under the Agreement; and
- x. Their primary location on Guam.

- 8. The Recipient must have prior experience managing endangered species populations; conducting invasive species inventory and/or delineation surveys; implementing invasive species control and native forest restoration actions on military installations; and conducting wildlife monitoring and habitat enhancement activities. The Recipient must have prior experience coordinating and working with military personnel in implementing invasive and endangered species management and native reforestation on military installations.

9. The Recipient shall provide the GO (via the CATR[s]) the names of persons and copies of their resumes being considered for work under this Agreement. The Recipient shall not replace or substitute any key personnel member without prior written approval by the GO.
10. The Recipient shall work closely with the CATR(s) in planning and carrying out all field activities.
11. All work conducted in support of this Agreement shall comply with all applicable federal, territorial, and other laws, regulations, and requirements.
12. The CATR(s) shall be notified immediately and work stopped if any activities may adversely affect any threatened or endangered species.
13. Many JRM facilities are secured. Prior to accessing JRM facilities, the Recipient shall coordinate with the CATR(s) to review the guidelines for conducting work on JRM facilities. This meeting can be conducted as part of the kickoff meeting.
14. Photography is restricted on certain JRM facilities. The Recipient and all of its representatives are required to obtain camera passes issued by Naval Base Guam (NBG), Andersen AFB, and Marine Corps Base Camp Blaz (MCBCB) prior to taking any photographs on the JRM premises. Only photographs of Agreement-related activities will be permitted.
15. Smoking is not allowed in the non-developed areas while individuals are working on JRM lands or leased lands in the CNMI.
16. The Recipient may request to review pertinent files at JRM and past research conducted at applicable JRM facilities.
17. At no additional cost to the Government, the Recipient shall be in possession of all necessary permits or certifications necessary to conduct the activities stipulated in this Agreement.
18. All parties involved in this Agreement agree to comply with all applicable laws, regulations, and other requirements pertaining to the provision of safe and respectful workplace and to provide a work environment free of harassment and intimidation for such party's own employees and third parties.
19. All work conducted in support of this Agreement shall comply with all applicable federal laws including, but not limited to, the Endangered Species Act, the Natural Historic Preservation Act, the Clean Water Act and the Migratory Bird Treaty Act.
20. Vehicle operators on all Navy property and operators of government-owned vehicles shall not use cell phones unless the vehicle is safely parked or unless they are using a hands-free device. Hands-free devices include console/dash-mounted or otherwise secured cellular phones with integrated features such as voice-activation speed dial, voice activation speakerphone, or other similar technology for sending and receiving calls. Driver uses of

any portable, personal listening device worn inside the aural canal, around or covering the driver's ear while operating a motor vehicle is prohibited. Prohibited listening devices include wired or wireless earphones and headphones (including bluetooth or similar technology) (per NAVBASEGUAMINST 5560.2F, 18 Mar 2026). Law enforcement and emergency services personnel are exempt when in a duty status. JRM Security personnel can issue military motor vehicle citations to operators in violation of this policy while on installations.

21. All field notes, field data forms, electronic storage of field data, photographs, etc. collected and produced as part of this Agreement are the property of the DON. Legible copies of the field notes, data forms, photographs, and other information shall be provided to the CATR(s) upon request.
22. The data obtained during this Agreement shall be scientifically defensible and suitable for publication. All methods of data collection and analyses shall be standardized with previous studies conducted by the Recipient under past Agreements for this type of work, or when appropriate, analyzed using acceptable new or improved methods as determined in current scientific literature(s). If changes in analyses make results unfit for comparison with previously collected data, the Recipient shall reanalyze all appropriate data sets for comparison. The GO shall approve (via the CATR[s]) in advance any changes to previously used experimental designs, methods of data collection and/or analyses, which shall be provided in the Recipient's required Work Plan. The CATR(s) at their discretion, may subject draft work plans, draft reports or draft manuscripts to external peer review.
23. In order to avoid impacts to federally listed, rare, or endemic plants the Recipient must coordinate all vegetation and ground disturbing activities with the CATR(s). Under no circumstances are any federally protected plants to be disturbed and/or destroyed when completing the work required in this Agreement. The Recipient shall ensure that all footwear, backpacks, clothing, vehicles and equipment transported to JRM areas are clean of weed seed.
24. Work areas within the JRM AOR may have Unexploded Ordnance (UXO) from WWII. Recipient field personnel must attend all required UXO Awareness Trainings prior to conducting any fieldwork on an annual basis. No ground disturbing activities are to take place unless authorized by the CATR(s).
25. Under no circumstances shall the Recipient violate the Archeological Resources Protection Act. If the Recipient accidentally disturbs an archeological and/or cultural resources site, the Recipient shall leave the site immediately (as intact as possible) and contact the CATR(s) and JRM Cultural Resources Program Manager.
26. No buildings will be modified or altered without permission from the CATR(s) and designated base personnel. The Recipient shall not violate the National Historic Preservation Act.
27. The Recipient must comply with the JRM Hazardous Waste Management Plan. The Recipient shall manage generated hazardous material, hazardous waste, and hazardous

waste residues in accordance with applicable Federal, Territorial, and other laws, regulations, and other requirements. Transport and dispose of hazardous waste (i.e., batteries) in accordance with applicable Federal, Territorial, and other laws, regulations, and other requirements.

28. The Recipient shall inform the appropriate Base Security via phone and e-mail of any unusual activity observed while conducting surveys in the field (e.g. trespassers or persons in unauthorized areas). Information should include (a) location, (b) date, (c) time, and (d) any detailed facts regarding the activity.
29. The Recipient shall inform the CATR(s) via phone and e-mail of any endangered, threatened, or rare animal or plant species observed while conducting surveys in the field (e.g. species which are federally listed or are Territorial Species of Special Concern). Information should include (a) location, (b) date, (c) time and (d) any detailed facts about the sighting.
30. Throughout the term of this Agreement the CATR(s) shall be afforded the opportunity by the Recipient to periodically observe the Recipient's field activities, to review computer or paper files of raw data, prepared data (such as data analyses, summaries, maps, figures, tables, etc.), or any record deemed appropriate by the GO in establishing the Recipient's performance in fulfilling the requirements of this Agreement.
31. The DON, via the GO, may request updated data presented on maps, figures and/or tables whenever the DON's need to obtain this information is before the next report required under Section J of this Agreement. The Recipient shall forward the requested data electronically within ten (10) days from the date of request. If the requested data cannot be provided within this time frame, the Recipient shall forward electronically the most updated raw data to the GO, via the CATR(s). The DON understands that facilitating the most updated requested data may reduce the amount of work that would normally be accomplished during the period of time required to complete the request. The Recipient shall document the amount of efforts and its translated cost estimate that would have been incurred by the Recipient to complete the request for updated data. This document shall be electronically forwarded to the GO (via CATR[s]) to review so that the DON will have a firm understanding on the amount of work displaced that would have normally been accomplished during the period of time required to complete the request.
32. The Recipient is authorized to allow personnel to telework as necessary to complete the required tasks. Government furnish equipment and electronics may be used while in telework status.

H. TECHNICAL REQUIREMENTS

This Agreement requires the Recipient to fulfill four (4) technical requirements during the performance period, as follows:

1. develop, implement, and manage a comprehensive Work Plan for the performance of all tasks detailed within this SOW;

2. develop and implement BTS and habitat-based management strategies and Standard Operating Procedures (SOPs) to suppress BTS populations and restore habitat for the recovery of federally and territorially listed species, ensuring no infringement upon military missions;
3. determine the minimum thresholds of BTS suppression and habitat management activities required to support conditions conducive to native species persistence and recovery; and
4. monitor native plant and wildlife populations to evaluate project efficacy and ensure their long-term protection and recovery.

To meet the technical requirements, this agreement requires the Recipient to complete the following two (2) tasks:

Task 1 – Project Planning and Management:

The Recipient shall provide all project oversight, coordination, reporting, and management for the tasks detailed herein.

The Recipient shall participate in a kick-off meeting prior to the start of work to become acquainted with the various parties involved with the project; to discuss the statement of the proposed work including scheduling, and coordination; and to define channels of communication and points of contact.

1. The Recipient will be responsible for presenting their Plan of Action and Milestones (POAM) detailing a schedule for timely completion of the work.
2. The Recipient will develop a Work Plan detailing how Agreement Tasks will be accomplished.
3. The Recipient shall ask any questions related to the successful completion of the work.
4. The Recipient shall be responsible for documenting the discussions (meeting minutes). Meeting minutes shall be provided to the CATR(s) within 5 days of the kick-off meeting.
5. The Recipient shall prepare and submit quarterly reports and invoice of costs associated with task implementation.
6. The Recipient will participate in weekly project management meetings for team alignment, communication, and progress tracking.
7. The Recipient shall maintain budget coordination, tracking, and reporting as appropriate.

It is assumed that the kickoff meeting will be held at NAVFAC Marianas, but may be held by a conference call. The Recipient shall provide project status and schedule updates, and coordinate field work and deliverables throughout the duration of the Agreement.

It is expected that the Recipient can provide a flexible work team to perform multiple tasks simultaneously or switch tasking activities as demanded by work schedule, weather, or military training events.

Task 2 – Protected Species and Habitat Management

In coordination with the CATR(s), the Recipient shall develop and implement BTS and habitat-based management strategies and Standard Operating Procedures (SOPs) to support the recovery of protected species at designated sites on JRM lands.

The primary target species for this effort include:

- Federal Endangered Mariana common moorhen (*Gallinula chloropus guami*)
- Federal Threatened Marianas fruit bat (*Pteropus mariannus mariannus*)
- Guam Endangered Micronesian starling (*Aplonis apaca*)

This project will utilize the Micronesian Starling as a research surrogate for the Federal Endangered Guam Micronesian Kingfisher (*Todiramphus cinnamomina cinnamomina*). The kingfisher is currently extirpated from its native Guam, with the remaining individuals primarily in captive breeding programs and a single reintroduced population on Palmyra Atoll. A primary conservation goal for this species is its eventual reintroduction to Guam, which this research aims to support.

The Micronesian Starling is one of only two native forest bird species remaining on Guam and has persisted in areas with active snake control, such as Andersen Air Force Base. As both the kingfisher and the starling are cavity-nesting species, the starling serves as an ideal surrogate for research. This project will study nesting activity of the Micronesian Starling to gather critical data that will directly inform future reintroduction strategies for the Guam Micronesian Kingfisher.

Management strategies may include, but is not limited to, SOPs for site specific BTS control (*i.e.* toxicant bait stations, live lure traps, hand captures, aerial application of toxicants, etc); feral animal control (cats, dogs); rodent control; weed removal; limestone forest restoration; vegetation and wildlife monitoring; wildlife habitat enhancement (*i.e.* nest boxes, nest platforms); and long-term monitoring to determine minimum thresholds of BTS control and habitat management activities needed to support conditions conducive to native species persistence and recovery. SOPs will list specific information about assessing risk, control tools/methods, monitoring procedures after control/management is initiated and methods to evaluate the success of control/management actions taken.

Other management requirements include, but is not limited to, data collection and management, GIS mapping and analysis, reporting, outreach, trail cutting/landscape management, and localized invertebrate control to reduce BTS bait loss. Data collection may include the use of trail/regular cameras and any other methods that may improve data analysis and management outcomes.

The Recipient will implement BTS and habitat-based management strategies at locations designated by the JRM CATR(s) on JRM lands. Sites may include, but are not limited to

Tarague Forest Conservation areas within the proximity to Micronesian starling nesting sites on AAFB and wetland and water sites within proximity to Mariana common moorhen nesting sites on NBG.

Sub-Task 2a. BTS and habitat-based management for Mariana Common Moorhen (*Gallinula chloropus guami*) recovery.

In coordination with the CATR(s) the Recipient shall develop and implement a SOP(s) for BTS and habitat-based management at Mariana Common Moorhen nesting sites and evaluate the effects of BTS suppression on Moorhen survival and habitat use.

This task will be implemented at designated sites on NBG.

The Recipient shall coordinate closely with the CATR(s) in the continued development (i.e., update) of survey inventory methodologies to be used during the implementation of baseline inventory and long-term monitoring protocols. These protocols have been developed previously in previous work, but require ongoing updating and refinement as new information and methodologies become available.

The Recipient shall have, at a minimum the capability to support the following activities on a quarterly basis:

1. Moorhen surveys
2. Habitat monitoring

The Recipient shall have, at a minimum the capability to support the following activities on a weekly basis:

1. BTS control (*i.e.* toxicant bait stations, live lure traps, hand captures)
2. rodent, feral cat, and dog control
3. weed removal
4. wildlife habitat restoration (*i.e.* nest platform installation and maintenance, non-native plant removal, native plant propagation and planting)

The Recipient shall follow established protocols for BTS control, plant and wildlife monitoring, and habitat management; any changes will be directed by the JRM CATR(s).

BTS Control

To perform this activity there will be a minimum of 24 labor hours needed to prep and service up to 150 toxicant bait stations once per week. An estimated 600 dead neonatal mice (DNM) per month will be required to service bait stations. Required supplies and materials to fabricate, repair, or replace bait stations shall be purchased by the Recipient. The Recipient will provide the appropriate number of vehicles to support this sub-task. The JRM CATR will order the toxicants (acetaminophen) for the baits.

Sub-Task 2b. BTS and habitat-based management for Micronesian Starling (*Aplonis apaca*) recovery.

In coordination with the CATR(s) the Recipient shall develop and implement a SOP for BTS and habitat-based management at Micronesian Starling nesting sites and evaluate the effects of BTS suppression on Micronesian Starling survival and habitat use.

This task will be implemented at Tarague Forest Reserve.

The Recipient shall coordinate closely with the CATR(s) in the continued development (i.e., update) of survey inventory methodologies to be used during the implementation of baseline inventory and long-term monitoring protocols. These protocols have been developed previously in previous work, but require ongoing updating and refinement as new information and methodologies become available.

The Recipient shall have, at a minimum the capability to support the following activities on a quarterly basis:

1. Micronesian starling surveys
2. Habitat monitoring

The Recipient shall have, at a minimum the capability to support the following activities on a weekly basis:

1. BTS control (*i.e.* toxicant bait stations, live lure traps, hand captures)
2. rodent, feral cat, and dog control
3. weed removal
4. wildlife habitat restoration (*i.e.* nest box installation and maintenance, non-native plant removal, native plant propagation and planting)

The Recipient shall follow established protocols for BTS control, plant and wildlife monitoring, and habitat management; any changes will be directed by the JRM CATR(s).

BTS Control

To perform this activity there will be a minimum of 24 labor hours needed to prep and service up to 150 toxicant bait stations once per week. An estimated 600 dead neonatal mice (DNM) per month will be required to service bait stations. Required supplies and materials to fabricate, repair, or replace bait stations shall be purchased by the Recipient. The Recipient will provide the appropriate number of vehicles to support this sub-task. The JRM CATR will order the toxicants (acetaminophen) for the baits.

I. MEETING COORDINATION

1. The Recipient or his/her designee will attend (either on site or via telephone) a kick-off meeting with the CATR(s) and/or other necessary parties to ensure coordination of activities. The CATR(s) shall arrange the meeting.
2. The Recipient shall attend weekly coordination meetings with the CATR(s) and other environmental and installation staff, or as required.

J. SUBMITTALS AND SCHEDULES

1. Electronic copies of all submittals/schedules/deliverables (examples include, but are not limited to, draft/interim/final reports, progress reports/monthly reports) will be provided to the CATR(s) for retention in the official Agreement file.
2. Submittals:

The Recipient shall submit the following:

- a. A Quarterly Report that details the work completed during the reporting period including related data and individual after action reports. Each Quarterly Report shall detail the work completed on each task items listed in Section H, SOW and the related data and compilations for the separate tasks. For example, the Quarterly Report shall detail and include results from completed baseline survey inventories for locations and sites completed; invasive species control measures and actions taken; after action reports detailing BTS control and wildlife monitoring actions taken during the reporting period, etc. Quarterly Reports shall be submitted to CATR(s) electronically via email.
- b. Specific report formats and reporting times will be developed and provided by the CATR(s). This will be discussed during the kickoff meeting.
- c. All Quarterly reports shall be compiled and provided to CATR(s) in the final report.
- d. BTS and habitat-based management strategies and SOPs submitted within eleven (11) months after award for CATR(s) review, acceptance, and approval.
- e. A draft report summarizing the compiled data shall be submitted to CATR(s) for comment NLT thirteen (13) months after Agreement award. CATR(s) will review and return to the Recipient NLT fourteen (14) days after receipt of draft report.
- f. The final report will follow guidelines outlined in Attachment B, incorporating any comments, shall be delivered to CATR(s) NLT fifteen (15) months after contract award, and include:
 - (1) background information identifying the study area, previous relevant studies, and other appropriate information;
 - (2) methods for monitoring/surveys;
 - (3) recommendations for summary of preventative methods (including control protocols);
 - (4) results (including results from field surveys);
 - (5) discussion summarizing findings from the project; and
 - (6) GIS maps of survey locations.
- g. A total of four (4) final reports will be delivered: two (2) in hard copy format and two (2) in electronic (DVD) format.
- h. All GIS data (delineation of habitats and any other spatial data) will be delivered on DVD-ROM media.
- i. All GIS data will contain populated metadata, be SDSFIE compliant, and projected in UTM Zone 55 North, WGS84 (see Attachment D).

- j. Final deliverables shall be completed and submitted to CATR(s) no later than fifteen (15) months after Agreement award.

3. Related Requirements and Information

The Recipient for the work under this Agreement will provide all study design, labor, transportation, equipment, material, tools, supplies, supervision, and administration services needed to complete the requirements in reference to the (RSOI [Request for Statements of Interest] and SOW).

- a. The Recipient will coordinate and hold a project kickoff meeting with CATR(s) to discuss work expectations NLT two (2) weeks after award.
 - b. Recipient will submit draft Work Plan, draft POAM, draft Accident Prevention Plan (APP), and draft Activity Hazardous Analysis (AHA) seven (7) working days prior to the kickoff meeting.
 - c. The Recipient will email Quarterly Report (update on the results from surveys) in electronic format.
 - d. If unforeseen conditions warrant any deviations from these methods, the Recipient must consult with CATR(s).
 - e. Work will be conducted according to the schedule agreed during the kick-off meeting. The Recipient shall notify the Agreement Administrator within two (2) business days of any problems that occur to prevent the scheduled field work. It is recognized that weather conditions, equipment failures and site conditions can interfere with fieldwork and create unforeseen unsafe working conditions. The Recipient will also immediately report any problems or concerns encountered at the field sites.
- ### 4. Performance Standard

The Recipient shall submit the final report according to the following performance standard:

- a. The Final Report adhered to the outline provided (See Section J above and Attachment B).
- b. Conclusions in the Final Report were substantiated with available data and the relevant scientific literature, planning, and regulatory documents.
- c. All Government comments on the Draft Report were provided and addressed in comment matrix.
- d. All Government comments on the Draft Report were integrated. The Recipient shall submit the following deliverables:

<u>Task Deliverables</u>	<u>Copies</u>	<u>Submittal Date/Timing</u>
Draft POAM, draft Work Plan, draft APP, and draft AHA	Electronic-pdf format (email)	Seven (14) working days after kickoff meeting
Final POAM, final Work Plan, final APP, and final AHA	Electronic-pdf format (email)	Five (5) working days after receipt of GOVT comments
Kickoff meeting minutes	Electronic-pdf format (email)	Five (5) working days after kickoff meeting
Quarterly Reports	Electronic-pdf format (email)	Quarterly

BTS and Habitat-Based Management Strategies and SOPs to suppress BTS and restore habitat for native species and ecosystem recovery	Electronic – pdf format (email) two (2) hard copies each	Eleven (11) months after award
Draft Report	Electronic-pdf format (email) two (2) CDs each 2 hardcopies each	No later than thirteen (13) months after award.
Final Report	Electronic-pdf format (email)	No later than fifteen (15) months after award.

5. Format for Deliverables

All documents shall be submitted on 8 1/2 by 11-inch paper, 11 by 17-inch foldout maps/figures are acceptable. All reports shall be double-sided. All original documentation will be reproducible by black and white xerography with heavy paper or hard covers and the original unbound copy with hard covers that will allow pages to be easily removed. Where possible, all reports shall be printed on recycled paper and limit “blank” pages. Bindings will include a label identifying the report, author(s), and the date of completion.

a. GIS Deliverables

Geographic Information System (GIS) layers (including but not limited to survey area polygons, species locations (e.g., of fence line, gate, tree out planting, and pre-existing native trees found within plots and along the originally proposed fence line, etc.) shall be submitted as part of all georeferenced data deliverables specified in this Agreement award. GIS-based color maps shall be included in the Draft and Final Reports. Data shall be projected in UTM Zone 55 North WGS84, delivered in a geodatabase compatible with ArcGIS 9.0 or greater utilizing the most recent SDSFIE format (currently version 3.1) to populate feature classes and metadata accordance with these standards and spatial data shall be usable upon delivery. Data deliverables shall also be compliant with the NAVFAC EV GIS Data Model, which can be provided upon request. A draft electronic copy of all GIS data created during the surveys shall be included with the Draft Report. All GIS products will comply with NAVFAC policy detailed in Attachment D.

b. Electronic Deliverables of Records

The data management may include a handheld field device for collecting field data and a web-based electronic media site, including a web GIS. The field handheld device will be used to record all field data including: MEC identification, man-hours for completing various tasks, geophysical data, and other required spatial data per this Agreement. The joint use of this system is to facilitate electronic exchange of information, key processes, and overall management of the Agreement. The electronic version/file of the preliminary/internal draft, draft, and final after comments are addressed shall be submitted in both: A) the native format, which Navy prefers be a Microsoft product, and B) Adobe Acrobat PDF (or compatible) format. The PDF version of all final deliverables (other than raw analytical and databases) must be a complete, mirror image of the hardcopy, and include appendices, maps, signature pages, etc. At completion of the project with the Final Report submittals, the Recipient will provide an electronic deliverable with a copy of all reports, meeting minutes, point papers, maps and map databases, and briefings. All electronic submittals will be

certified “virus free” and include the statement “virus free” on the disk or transmittal message. The Recipient shall verify, with the CATR(s), the appropriate data management requirements and electronic data deliverables.

c. CD-ROM Requirements

PDF files of final documents shall be provided in the following formats:

The entire document shall be provided as one .pdf file. The .pdf file shall have bookmarks for each item identified in the document's table of contents. The bookmark shall use the same description as provided in the table of contents. If the bookmark is lengthy, abbreviate as needed. Bookmark to the second level (i.e., 1.1, 1.2, 1.3, etc.). Do not bookmark signature page, list of acronyms, individual tables, photos, or figures. Each appendix, regardless of size, shall be provided as an individual pdf file. All maps, figures, and pictures shall be provided at a useable resolution. All color maps, figures, and pictures shall be provided in color PDF format.

All files associated with the document, shall be provided in native file format (e.g. Word, Access, CADD) on deliverable CD copies. In addition, the CDs shall include raw data. The CD jewel case cover (outside front) and CD label shall use the current approved layout and include:

- JRM and NAVFAC Logo
- Agreement Number Report Title
- Site
- Location
- Date Report finalized
- The word “UNCLAS”

Standard CD jewel cases shall be used. The jewel case spine shall identify the report title, site, and location. In the event multiple reports are requested on one CD, the jewel case cover (inside) shall include a list of all reports with the date and file name. The jewel case spine shall use "Various Reports" as the report title and also identify the site and location.

d. Photographs

The Recipient will document and record pertinent aspects of the work using color digital imagery. The Recipient will provide camera and all necessary equipment. Photographs of activities documented shall be included as an appendix on CD ROM. All photographs shall become DON Property and shall be submitted with the draft and final report. All original photographs shall be appropriately labeled with information to include:

- Date
- Location (specific place and Installation) subject/activity
- Identification of any people in the picture photographed

6. Submittal/Deliverable Standards

All submittals/deliverables are expected to be of the highest professional quality and may be rejected if any of the following exists:

- There are typographical errors, spelling, or grammar mistakes; or
- Results and discussion are not tied directly and continually to natural resource management concerns of the installation; or
- The document is not organized in a manner that flows well; or
- The document does not provide appropriate context, background, literature review, and comparison to other relevant studies, locations, and similar species.
- The appropriate style guide is not adhered to (in most cases this is the JWM or CSE).

K. DATA AND PUBLICATION

1. This Agreement is subject to, and the Recipient shall comply with, 2 CFR 200.315 concerning “Intangible Property,” which includes use of research data. Any information or data protected by federal law will be identified by the Government prior to being provided to Recipient and the Government will notify the Recipient in advance of applicable limitations on such information. Except as to information so identified and limited, there are no restrictions on reporting or publishing reports based upon the fundamental research that is the subject of this Agreement.

The Federal Government has the right to obtain, reproduce, publish or otherwise use the data first produced under this Agreement and authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes. The DON acknowledges and agrees that the Recipient’s fundamental consideration in performing the research under this Agreement shall be Recipient’s right to publish or present the results of such research for academic and scientific purposes. The Recipient shall submit, for review and comment, any proposed professional, scientific or non-scientific report, paper, article, presentation, or note published or unpublished to be part of any technical or non-technical scientific workshops, conferences, or symposia or be provided to anyone not a party to this Agreement to the DON thirty (30) days prior to the submission of the work mentioned above.

2. The acknowledgements for any note, outreach material, paper, article, report, or presentation resulting from this work shall include the following statement: “This research was supported by the Department of the Navy, Joint Region Marianas (the “Navy”), through a cooperative agreement (*XXX Agreement Number*) between the Navy and *XXX Name of Recipient*.” Any publications resulting from this work shall be provided at no cost to the Department of the Navy in quantities jointly determined by the Department of the Navy representative and the Recipient at the time of publication.
3. The Recipient shall be responsible for ensuring all personnel participating in activities under this Agreement have read and acknowledged the DATA AND PUBLICATION provisions of this Agreement.

L. RELEASE OF INFORMATION

The Recipient shall not respond to any inquiries about this Agreement from the news media or non- governmental organizations or other persons during the term of this Agreement unless it has first consulted with the Government and a determination appropriately made by the cognizant Government representative concerning release of information pursuant to the authority (Federal or State) cited by the requester. All inquiries shall be directed to the JRM Public Affairs Officer at the Region and Public Affairs Officer at NAVFAC Marianas through the CATR(s).

M. SAFETY

The Recipient shall develop and submit an Accident Prevention Plan (APP), including an Activity Hazardous Analysis (AHA) as an appendix. The APP with AHA shall be developed in the format provided in Appendix A of the EM 385-1-1, 30 Nov 2014, or latest edition with

updates, US Army Corps of Engineers' Safety and Health Requirements Manual and shall address each of the elements and sub elements in the outline.

The APP shall provide a safe and healthful environment for all of the Recipient's personnel and others that may be exposed to potentially hazardous conditions at the project site. If the project is limited in scope, an abbreviated APP can be created, in the format provided in Appendix A of the EM385-1-1, 30 Nov 2014 or latest edition with updates, in the section "Abbreviated APP for Limited-Scope Service, Supply and R&D Contracts". Recipient shall address the minimum requirements and other areas of the EM 385-1-1 that are pertinent to the Agreement. The Recipient shall certify to the CATR(s) that the final APP has been reviewed with each Recipient's and any subcontractor's employees prior to mobilization and start of fieldwork activities.

A draft and final APP shall be submitted according to the schedule in the Task Deliverable Table (Section J). The APP shall be accessible to all site employees at all times during the project and a copy shall be mounted on or placed adjacent next to the Recipient's safety and health bulletin board in an area commonly accessed by workers. If a bulletin board is not practical to have at the site, make the APP available in a vehicle or designated spot utilized for work under this Agreement.

The draft APP with AHA must be submitted to the CATR(s) for review and acceptance. The Recipient will work directly with the CATR(s) to coordinate review, respond to comments, and obtain final acceptance of the APP. The Recipient shall forward a copy (with all corrections) of the final APP to the CATR(s) prior to start of the work.

Recipient shall immediately inform CATR(s) of any injuries or deaths that occur resulting from execution of this Agreement.

N. INSURANCE

1. At the commencement of this Agreement, the Recipient shall obtain, from a reputable insurance company or companies satisfactory to the Government, comprehensive general liability insurance. The insurance shall provide an amount not less than a minimum combined single limit of \$1,000,000.00 for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, property damage or both, suffered or alleged to have been suffered by any person or persons resulting from or related to the presence or operations of the Recipient, its employees, agents or contractors under this Agreement. The Recipient shall require the insurance company or companies to furnish the Government with a certified copy of the policy or policies, or certificates of insurance evidencing the purchase of such insurance. Each policy of insurance required under this Paragraph shall contain an endorsement reading as follows:
"The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy."
2. All insurance required of the Recipient hereunder shall be in such form, for such periods of time and with such insurers as the Government may require or approve. All policies or certificates issued by the respective insurers for public liability and property insurance shall name the United States of America as an additional insured, and shall provide that no cancellation, reduction in amount or any material change in coverage thereof shall be effective

until at least 30 calendar days after receipt by the Government of written notice thereof, regardless of any prior act or failure to act or negligence of the Recipient or the Government or any other person concerning such amount or change in coverage.

3. The Recipient at its sole cost and expense, may insure its activities in connection with this Agreement by maintaining a program of self-insurance that complies with the requirements of this Section N, including coverages specified in Attachment B hereof. Recipient shall also provide a copy of the exempting statute cited in support of its claim of self-insurance pursuant to Section 2 of Attachment A to this Agreement. (The self- insurance clause is applicable only to appropriate state and local governments and qualifying institutions of higher education who provide evidence of a self-insurance program in accordance with this Section and Attachment A, Section 2.)
4. During the entire period the Agreement shall be in effect, the Recipient shall require its contractors or agents or any contractor performing work at the Recipient's or agent's request on the affected Government Premises to carry and maintain the insurance required below:

“Comprehensive general liability insurance in the amount of 1,000,000.00”

5. The Recipient and any of its contractors or agents shall deliver or cause to be delivered promptly to the Agreement Administrator, a certificate of insurance or a certified copy of each renewal policy evidencing the insurance required by this Agreement and shall also deliver no later than thirty (30) calendar days prior to expiration of any such policy, a certificate of insurance evidencing each renewal policy covering the same risks.
6. In the event that any item or part of the premises or facilities shall require repair, rebuilding, or replacement resulting from loss or damage, the risk of which is assumed under this Section N, the Recipient shall promptly give notice thereof to the Government and, to the extent of its liability as provided in this Section N, shall, upon demand, either compensate the Government for such loss or damage, or rebuild, replace or repair the item or items of the premises or facilities so lost or damaged, as the Government may elect. If the cost of such repair, rebuilding, or replacement exceeds the liability of the Recipient for such loss or damage under this Section N, the Recipient shall effect such repair, rebuilding, or replacement if required so to do by the Government, and such excess of cost shall be reimbursed to the Recipient by the Government. In the event the Recipient shall have effected any repair, rebuilding, or replacement which the Recipient is required to effect pursuant to this Section N, the Government shall direct payment to the Recipient of so much of the proceeds of any insurance carried by the Recipient and made available to the Government on account of loss of or damage to any item or part of the premises or facilities as may be necessary to enable the Recipient to effect such repair, rebuilding or replacement. In event the Recipient shall not have been required to effect such repair, rebuilding, or replacement, and the insurance proceeds allocable to the loss or damage which has created the need for such repair, rebuilding or replacement have been paid to the Recipient, the Recipient shall promptly refund to the Government the amount of such proceeds.

O. PAYMENTS

1. Partial payments equal to the amount of work accomplished may be made monthly after submission of completed schedules and deliverables in Section J. Recipient shall prepare itemized invoices according to costs incurred during the reporting period and submit the itemized invoices to the Government for payment. Partial payments shall not exceed 85 percent of the total funding for the Agreement for any individual period of performance.
2. The final payment of the balance of the Agreement funds for a period of performance or 15 percent of the period of performance funding for the Agreement, whichever is less, shall be paid when the final report and all other submittals and deliverables listed in Section J have been received and accepted by the CATR(s).
3. Any requirement for the payment or obligation of funds, under the terms of this Agreement, shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 USC §1341 et seq. Nothing in this Agreement shall be construed as implying that Congress will, at a later time, appropriate funds sufficient to meet deficiencies.
4. Payments will be made in accordance with Defense Federal Acquisition Regulation Supplement (DFARS) 252.232-7006 Wide Area Work Flow Payment Instruction. See Attachment C WAWF Instructions for instructions on payment procedures

P. EXECUTIVE COMPENSATION & SUBCONTRACT REPORTING

Section 2(d) of the Federal Funding Accountability and Transparency Act of 2006 (Pub. L. No. 109-282), as amended by section 6202 of the Government Funding Transparency Act of 2008 (Pub. L. 110-252), requires the Contractor/ Recipient to report information on subcontract awards. The law requires all reported information be made public; therefore, the Contractor/ Recipient is responsible for notifying its subcontractors that the required information will be made public.

Unless otherwise directed by the Grants Officer, by the end of the month following the month of award of a firsttier subcontract with a value of \$25,000 or more, (and any modifications to these subcontracts that change previously reported data), the Contractor/ Recipient shall report the following information at <http://www.fsrs.gov> for each first-tier subcontract:

- (a) Unique identifier (DUNS Number) for the subcontractor receiving the award and for the subcontractor's parent company, if the subcontractor has one.
- (b) Name of the subcontractor.
- (c) Amount of the subcontract award.
- (d) Date of the subcontract award.
- (e) A description of the products or services (including construction) being provided under the subcontract, including the overall purpose and expected outcomes or results of the subcontract.
- (f) Subcontract number (the subcontract number assigned by the Recipient).
- (g) Subcontractor's physical address including street address, city, state, and country. Also include the nine-digit zip code and congressional district.
- (h) Subcontractor's primary performance location including street address, city, state, and country. Also include the nine-digit zip code and congressional district.
- (i) The prime Agreement number, and order number if applicable.

- (j) Awarding agency name and code.
- (k) Funding agency name and code.
- (l) Government contracting office code.
- (m) Treasury account symbol (TAS) as reported in FPDS.
- (n) The applicable North American Industry Classification System (NAICS) code.

By the end of the month following the month of an Agreement award, and annually thereafter, the Recipient shall report the names and total compensation of each of the five most highly compensated executives for the

Recipient's preceding completed fiscal year at <http://www.ccr.gov>, if –

- (a) In the Contractor's/ Recipient's preceding fiscal year, the Contractor/ Recipient received –
 - (i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and
 - (ii) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and
- (b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>).

Unless otherwise directed by the Contracting Officer, by the end of the month following the month of a first-tier subcontract with a value of \$25,000 or more, and annually thereafter, the Contractor/ Recipient shall report the names and total compensation of each of the five most highly compensated executives for each first-tier subcontractor for the subcontractor's preceding completed fiscal year at <http://www.fsr.gov>, if

- (a) In the Subcontractor's preceding fiscal year, the Subcontractor received –
 - (i) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and
 - (ii) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and
- (b) The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>).

If the Contractor/ Recipient in the previous tax year had gross income, from all sources, under \$300,000, the Contractor/ Recipient is exempt from the requirement to report subcontractor awards. Likewise, if a subcontractor in the previous tax year had gross income from all sources under \$300,000, the Contractor/ Recipient does not need to report awards to that subcontractor.

Q. REFERENCES

1. 2024 JRM Integrated Natural Resources Management Plan (INRMP)

2. 2021 Joint Region Marianas BTS Strategic Plan
3. Andersen Air Force Base Sali Monitoring Protocol
4. 2021 Plant and Invertebrate Survey, AAFB Tarague Basin Final Report
5. 2022 AAFB Informal Section 7 Consultation for Tarague 3 Ungulate Exclosure
6. 1992 USFWS Recovery Plan Mariana Common Moorhen

END

ATTACHMENT A: SELF-INSURANCE REQUIREMENTS FORM

INSURANCE MUST CONFORM TO ALL THE REQUIREMENTS LISTED BELOW PRIOR TO RECIPENT BEING PERMITTED TO USE OR OCCUPY GOVERNMENT PREMISES OR PROPERTY PURSUANT TO THE COOPERATIVE AGREEMENT

1. PUBLIC LIABILITY AND PROPERTY DAMAGE

a. Required minimum amounts of insurance listed below:

\$ N/A	Fire and Extended Coverage
\$ 1,000,000	Third Party Property Damage
\$ 1,000,000	Third Party Personal Injury Per Person
\$ 1,000,000	Third Party Personal Injury Per Accident

2. SELF-INSURANCE REQUIREMENTS: If your organization is self-insured, please provide evidence of self- insurance which meets or exceeds the insurance liability amounts in Item # 1.

The following information, written on your organization's letterhead, is also required:

- A brief description of your organization's self-insurance program, with reference to statutory or regulatory authority establishing the self-insurance program.
- The name and telephone number of your organization's self-insurance program administrator.
- Reference the appropriate military facility and cooperative agreement number.

3. IF YOUR SELF-INSURANCE PROGRAM DOES NOT MEET THE ABOVE MINIMUM REQUIREMENTS:

- Provide evidence of Excess Liability Insurance in the amount necessary to meet or exceed the minimum requirements in Item #1 above.
- The following endorsements are required for Excess Liability insurance policies:
 - a. "The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy."
 - b. "The Commanding Officer, Naval Facilities Engineering Command Marianas, Guam shall be given thirty (30) days written notice prior to making any material change in or the cancellation of the self-insurance program."
 - c. "The United States of America (Department of the Navy) is added as an additional insured in operations of the policyholder at or from the premises licensed/leased from the United States".
 - d. "This insurance certificate is for use of facilities at Joint Region Marianas, Guam under this Cooperative Agreement, No. N40192-16-R-8001."

4. NOTICE: "RIGHT TO USE" DOCUMENTS WILL NOT BE FULLY EXECUTED UNTIL CERTIFICATE IS RECEIVED WITH PROPER ENDORSEMENTS.

NON SELF-INSURED REQUIREMENTS FORM

INSURANCE MUST CONFORM TO ALL THE REQUIREMENTS LISTED BELOW PRIOR TO RECIPIENT BEING PERMITTED TO USE OR OCCUPY GOVERNMENT PREMISES OR PROPERTY PURSUANT TO THE COOPERATIVE AGREEMENT

1. PUBLIC LIABILITY AND PROPERTY DAMAGE

a. Required minimum amounts of insurance listed below:

- \$ N/A Fire and Extended Coverage
- \$ 1,000,000 Third Party Property Damage
- \$ 1,000,000 Third Party Personal Injury Per Person
- \$ 1,000,000 Third Party Personal Injury Per Accident

2. THE CERTIFICATE OF INSURANCE MUST CONTAIN THE FOLLOWING ENDORSEMENTS:

- b. "The insurer waives any right of subrogation against the United States of America which might arise by reason of any payment made under this policy."
- c. "The Commanding Officer, Naval Facilities Engineering Command Marianas, Guam shall be given thirty (30) days written notice prior to making any material change in or the cancellation of the policy."
- d. "The United States of America (Dept. of the Navy) is added as an additional insured in operations of the policyholder at or from the premises **licensed/leased** from the United States."
- e. "This insurance certificate is for use of facilities at Joint Region Marianas, Guam under this Cooperative Agreement, No. N40192-16-R-8001."
- f. Loss, if any, under this policy shall be adjusted with Recipient and the proceeds, at the direction of the Government, shall be payable to Recipient, and proceeds not paid to Recipient shall be payable to the Treasurer of the United States of America."

3. NOTICE: "RIGHT TO USE" DOCUMENTS WILL NOT BE FULLY EXECUTED UNTIL CERTIFICATE IS RECEIVED WITH PROPER ENDORSEMENTS.

ATTACHMENT B: DRAFT AND FINAL REPORT FORMAT

The Annual Report shall follow the formats described by Mesmer, T.A and M.L. Morrison 2006. Unified Manuscript Guidelines for the Wildlife Society Peer-Reviewed Publications. Journal of Wildlife Management, 70(1): 304-320, as appropriate, with the following outline:

- i. Title page showing the title, date, and CATR(s) representative location and Cooperative Agreement Number
- ii. Sub-title page showing:
 - (a) Title
 - (b) “Prepared by” listing with affiliations
 - (c) “Under contract to” listing, and shall include the CATR(s) representative location
 - (d) Date
 - (e) Recommended citation
- iii. Table of contents, arranged as follows:
 - (a) Table of contents
 - (b) List of tables
 - (c) List of figures (photographs are considered figures)
 - (d) References/literature cited
 - (e) List of appendices
- iv. Abstract
- v. Introduction
- vi. Study Area
- vii. Methods
 - (a) This section should not be quantitative in nature, but should include information such as specific hours of the day, days of week that surveys/observations were accomplished, survey procedures, equipment used, etc.

- (b) Each method used to acquire data must be explained in sufficient detail such that another researcher could duplicate the study.
 - (c) Each statistical technique used must be accompanied by a justification and explanation as to why that particular test was chosen to analyze the data set.
- viii. Results at a minimum include:
 - (a) Data collected from tasks identified. Data are to be presented using both tables and figures. Cumulative analyses of data collected by previous contractors between 1998 and 2006 shall be conducted where appropriate and scientifically meaningful.
 - (b) Total man-hours spent by time period (0400 - 1200 hrs. and 1201 - 2000 hrs.), for: surveying - by site (canyon or other identified geographic area), monitoring each nest site, and any other information that would enable the reader to specifically quantify total man-hours spent on each significant activity.
 - (c) The chronology of releases including locations, and distribution, and the success of nesting
 - (d) The incidental observations of potential predators
- ix. Discussion. At a minimum this section shall include:
 - (a) A biologically meaningful synthesis and discussion of current and past results and with other recent studies obtained from the most updated scientific manuscripts, including unpublished scientific literatures, if available.
 - (b) Relevant work from previous research conducted, as appropriate, particularly in reference to long-term data collection and cumulative analyses.
- x. Conclusions and Management Implications
 - (a) Provide a summary highlighting the important factors influencing shrike survival and nesting success
 - (b) Provide a list of recommendations to improve or increase the efficiency of shrike management actions
 - (c) Provide recommendations to improve shrike management
- xi. Acknowledgments

Include the following statement: "This research was funded by Insert name of Region or Command."

- xii. Appendices. All appendices contained in Heath et al. 2006 shall be included, with any appropriate additional appendices.
- xiii. Electronic Appendices. Two copies of each Appendix shall be submitted on CD-ROM(s) as described below. 'Read Only' formatted files will not be accepted. The CD ROM(s) shall include an ASCII text file labeled README. The README file is to describe the contents of each CD and the total number of CDs. Should the CATR(s) have problems loading the data into the Navy's database, or should the data be incorrectly recorded, the Recipient will work with the CATR(s) to correct the problem. Successful loading of the data must be accomplished by Insert date or number of days.
 - (a) An inventory (to be included as an Appendix) of all equipment and supplies $\leq$ \$5000 purchased under this Agreement. The Recipient's property management standards for equipment acquired with Federal funds and federally-owned property shall include all of the following:
 - 1. Records for equipment and federally-owned property shall be maintained accurately and shall include the following information:
 - a. A description of the equipment or federally-owned property.
 - b. Manufacturer's serial number, model number, Federal stock number, national stock number, or other identification number.
 - c. Source of the equipment or federally-owned property, including the award number.
 - d. Whether title vests in the Recipient or the Federal Government.
 - e. Acquisition date (or date received, if the property was furnished by the Federal Government) and cost.
 - f. Information from which one can calculate the percentage of Federal participation in the cost of the equipment (not applicable to property furnished by the Federal Government).
 - g. Location and condition of the equipment or federally-owned property and the date the information was reported.
 - h. Unit acquisition cost.
 - i. Ultimate disposition data, including date of disposal and sales price or the method used to determine current fair market value where a Recipient compensates the DoD Component that made the award for its share.
 - 2. Property owned by the Federal Government shall be identified to indicate Federal ownership.

3. A physical inventory of equipment and federally-owned property shall be taken and the results reconciled with the equipment records at least once every two years. Any differences between quantities determined by the physical inspection and those shown in the accounting records shall be investigated to determine the causes of the difference. The Recipient shall, in connection with the inventory, verify the existence, current utilization, and continued need for the equipment or federally-owned property.
 - (a) An electronic copy of the report (text, tables and figures, not to include color photos or figures submitted in ARCVIEW) shall be submitted with the final report in a format readable by Microsoft Word.
 - (b) All databases containing raw data and all associated electronic data summary and analytical files shall be formatted in Excel, Word, Dbase IV, or any compatible Microsoft database software. Microsoft ACCESS files shall include all queries, reports, tables etc.
 - (c) All electronic source files for tables and figures shall be labeled and submitted.
 - (d) Electronic versions of all appendices printed in the FAR in formats readable by Microsoft Word or Excel.
 - (e) Electronic copies of all GIS coverages developed as part of this Agreement shall be submitted with the final report. These coverages shall be compatible with the existing GIS and readable in ARCVIEW 3.2.

ATTACHMENT C: WAWF INSTRUCTIONS

252.232-7006 WIDE AREA WORKFLOW PAYMENT INSTRUCTIONS (JUN 2012)

- (a) Definitions. As used in this clause--
Department of Defense Activity Address Code (DoDAAC) is a six position code that uniquely identifies a unit, activity, or organization.
Document type means the type of payment request or receiving report available for creation in Wide Area WorkFlow (WAWF).
Local processing office (LPO) is the office responsible for payment certification when payment certification is done external to the entitlement system.
- (b) Electronic invoicing. The WAWF system is the method to electronically process vendor payment requests and receiving reports, as authorized by DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.
- (c) WAWF access. To access WAWF, the Contractor/Recipient shall--
- (1) Have a designated electronic business point of contact in the Central Contractor Registration at <https://www.acquisition.gov>; and
 - (2) Be registered to use WAWF at <https://wawf.eb.mil/> following the step-by-step procedures for selfregistration available at this Web site.
- (d) WAWF training. The Contractor/Recipient should follow the training instructions of the WAWF WebBased Training Course and use the Practice Training Site before submitting payment requests through WAWF. Both can be accessed by selecting the “Web Based Training” link on the WAWF home page at <https://wawf.eb.mil/>.
- (e) WAWF methods of document submission. Document submissions may be via Web entry, Electronic Data Interchange, or File Transfer Protocol.
- (f) WAWF payment instructions. The Contractor/Recipient must use the following information when submitting payment requests and receiving reports in WAWF for this contract/order: N40192-20-2-8000
- (1) Document type. The Contractor shall use the following document type(s).

NAVY CONSTRUCTION/FACILITIES MANAGEMENT INVOICE

- 2) Inspection/acceptance location. The Contractor/Recipient shall select the following inspection/acceptance location(s) in WAWF, as specified by the contracting officer.
- (3) Document routing. The Contractor/Recipient shall use the information in the Routing Data Table below only to fill in applicable fields in WAWF when creating payment requests and receiving reports in the system.

Routing Data Table*

Field Name in WAWF	Data to be entered in WAWF
Pay Official DoDAAC	N68732
Issue By DoDAAC	N40192/CORESV
Admin DoDAAC	N40192/CORESV
Inspect By DoDAAC	N40192/CORESV
Ship To Code	N40192/CORESV

Ship From Code	N/A
Mark For Code	N/A
Service Approver (DoDAAC)	N40192/CORESV
Service Acceptor (DoDAAC)	N40192/CORESV
Accept at Other DoDAAC	N/A
LPO DoDAAC	N40192/CORESV
DCAA Auditor	N/A
Other DoDACC(s)	N40192/CORESV

- (1) Payment request and supporting documentation. The Contractor/Recipient shall ensure a payment request includes appropriate contract line item and subline item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), and all relevant back-up documentation, as defined in DFARS Appendix F, (e.g. timesheets) in support of each payment request.
- (2) WAWF email notifications. The Contractor/Recipient shall enter the email addresses identified below in the “Send Additional Email Notifications” field of WAWF once a document is submitted in the system.

thelman.fontenot@fe.navy.mil

stephen.mosher@fe.navy.mil

marc.hall@fe.navy.mil

- (b) WAWF point of contact.
 - (1) The Contractor/Recipient may obtain clarification regarding invoicing in WAWF from the following contracting activity's WAWF point of contact.

NOT APPLICABLE

- (2) For technical WAWF help, contact the WAWF helpdesk at 866-618-5988.

ATTACHMENT D: NAVFAC STANDARDS FOR GEOGRAPHIC INFORMATION SYSTEMS (GIS)

1. Overview:

The GeoReadiness Center (GRC) is the single, authoritative source and distribution point for all geospatial shore installation data within the region. The GRC houses the most current geospatial information for the entire region and provides access to the comprehensive data set and analysis tools to Regional and DOD decision makers/managers, sponsored contractors, and other sponsored individuals via a secure government Internet site.

2. Basic Deliverable Requirements:

a. Submittals, Government Review and Acceptance:

- i. All data used and developed under contract is intellectual property of the U.S. Government, and shall be turned over to the U.S. Navy upon completion of this amendment.
- ii. All submittals shall be reviewed for accuracy, structure and completeness by a GeoReadiness representative before acceptance. Contractors shall submit data and documentation samples at 25% and 75% project completion to avoid the rejection of final deliverables.
- iii. All source code (e.g. Python scripts, html files, etc.) and map files (ESRI ArcGIS .mpk) shall be provided to the government. iv. Failure to adhere to any of the stated delivery specifications could result in rejection of deliverables and nonpayment.

b. GIS Data Format: NAVFAC's GIS data is ERSI Geodatabase format, **version 10.3.1 as of July 7 2019**. All ESRI format data submittals must also be in version 10.3.1.

- i. All GIS/geospatial projects (i.e., MPK) shall be delivered containing all related source files in a specific project file, including extension, graphics, photos, CAD, source code (non-encrypted, Visual Basic) based on version of ArcGIS Desktop specified for the task order. Submittal format shall be determined by the COR.
- ii. Spatial Data (GIS Map Themes): Spatial data shall be delivered as an ArcGIS file geodatabase. File geodatabases are relational databases that contain geographic information. File geodatabases contain feature classes and tables. The names of these geodatabases should reflect the location of the geographic information it contains at the appropriate level of detail (region, special area, activity). The general format of personal geodatabase names is as follows:

Location_yyyymmdd.gdb

- iii. Location = Location of the geographic information, defined to the appropriate level of detail. Names begin at the regional level, using the 2-digit country code from iNFADS (e.g. HI=Hawaii, GQ=Guam, JA=Japan, etc.) and may narrow into an area of interest within the region (e.g. Pearl Harbor, Yokosuka, Apra Harbor, etc.). The location can be further narrowed down to the

activity level where the geodatabase can be identified by the activity's UIC (N68032, N58003, etc.)

- iv. `yyyymmdd=` Date that the geodatabase was created or amended, as expressed in year (yyyy), month (mm), and date (dd).
- c. Data Retention: all data (electronic and paper formats) must be removed from contractor equipment and possession and returned to the government at the end of the period of performance and before the final invoice is approved.
- d. Data Structure:
 - i. Unless specifically directed otherwise, all data shall be structured according to the current version of the Spatial Data Standards (SDSFIE) in use by NAVFAC. **This is version NDM 4.0 as of April 2019.** Information on the SDFSIE data model can be found at: <https://sdsfie.org>, and a copy of the current data model implementation shall be provided to the contractor.
 - ii. If new data is being created and the corresponding SDFSIE data structure exists, the government shall provide unpopulated layers to the contractor structured per current NAVFAC standards.
 - iii. If new data is being created and the corresponding data structure does NOT yet exist, the contractor shall provide the GRC with a data dictionary identifying all of the SDFSIE Entity Types, attributes, and/or domain values associated with the new feature(s), the geographic area(s) covered by the data and Spatial extent information prior to the creation/editing of GIS data. Acceptable formats: MS Excel or MS Word. (Adobe PDF is not an acceptable format. New non-SDS compliant attributes (meeting SDFSIE criteria) will require precise schema definitions.
- e. Government Source Data: The contractor will be provided access to any GIS data required for the project via a government computer, which will require Contractor Common Access Card (CAC). Government GIS repository is in an ESRI format. All data shall be returned in this format and structure unless the government specifies otherwise. A completed NAVFAC GIS Data Release form is required prior to data being released to the Contractor if editing is required to be completed on Contractor equipment.
- f. Attribute Population:
 - i. The contractor shall consult with the COR before populating attribute tables to ensure the results match the current GeoReadiness interpretation of the SDFSIE.
 - ii. The contractor shall identify the classification, type, location, ID number, and any other necessary attributes (specified by the Government) for all new/updated/edited features.
 - iii. For new field collected data, attribution must include the date collected in the following format.
 - 1. **Name:** Date
Description: Date that the feature was edited from its original or previous value.
Data Type: Date
Default Value: null

3. Data Integrity

- a. Data accuracy standards for all deliverables will be in accordance with those set forth in the section entitled 'Data Collection Procedures'. All deliverables should include an accuracy report in the metadata.
- b. The contractor shall employ appropriate QA/QC standards to ensure that data is topologically correct, accurate and complete (to include):
 - c. No erroneous overshoots, undershoots, dangles or intersections in the line work
 - d. Point and line features will be snapped together where appropriate to support networks. For example, do not break linear features for labeling or other aesthetic purposes.
 - e. Lines should be continuous and point features should be digitized as points. For example, point features, such as manholes, should not be drawn using only a circle (polygon) to represent its location. Preferably, use an attribute block symbol that has an insertion point in the center of the manhole.
 - f. No sliver polygons
 - g. Digital representation of the common boundaries for all graphic features must be coincident, regardless of feature layer
 - h. Geometric network connectivity must be maintained for utility networks. Note: This excludes field collected "walked" survey transect data

A summary of the methods used to correct inconsistencies and any remaining errors by case should be included in the metadata under the 'Logical Consistency Report' and 'Completeness Report' sections.

4. CAD Format Deliverables:

- a. CAD drawings may be accepted as GIS deliverables, if COR approves.
- b. All files must be accurately georeferenced and adhere to the requirements regarding the coordinate system, metadata, and the specified data Quality Control and Quality Assurance requirements.
- c. CAD deliverables shall include AutoCAD (DWG) files. CAD symbols placed within the design/drawing file shall adhere to the A/E/C CAD Standard. CAD symbol libraries can be found on the Tri-Service CAD/BIM Technology Center website.
<https://cadbim.usace.army.mil/CAD> <https://www.wbdg.org/ffc/army-coe/cad-bimtechnology-center> or <https://cadbimcenter.erd.c.dren.mil/default.aspx?p=a&t=1&i=7>.

5. Coordinate System:

All geospatial data, unless specified otherwise, shall be in the Geographic Coordinate System: GCS_WGS_1984, Datum: D_WGS_1984.

6. Metadata:

- a. **Feature Level Metadata:** Feature-level (record level) attribute metadata is required to be populated for each GIS feature/record, per the current SDSFIE version. Attributes for version 4.0 are listed in **APPENDIX B**
- b. **Layer Level Metadata:** Layer level metadata is required for all deliverables, structured according to the FGDC Content Standard for Digital Geospatial Data (CSDGM). Details

on the standard can be found at <http://www.fgdc.gov/metadata/geospatial-metadatastandards>.

7. Quality Control and Quality Assurance:

The contractor shall take all appropriate and needed QA/QC measures to ensure data is complete, topologically correct, accurate, structured correctly, and formatted correctly per the scope of work and complete (to include):

- a. ****All data shall be visually inspected before submittal to the government.****
- b. The numbers of records for all joined tables shall match, or the specific unmatched records shall be identified and explained to the satisfaction of the government.
- c. All required attributes (per NDM version 4.0 shall be populated).
- d. All domain constraints shall be adhered to, unless approved by the government, prior to submittal.
- e. No erroneous overshoots, undershoots, dangles or intersections in the line work.
- f. All area type features shall be closed polygons.
- g. Line features shall be snapped together where appropriate to support networks. For example, do not break linear features for labeling or other aesthetic purposes.
- h. Lines shall be continuous and point features shall be digitized as points. For example, point features, such as manholes, shall not be drawn using only a circle (polygon) to represent its location.
- i. No sliver polygons
- j. Digital representation of the common boundaries for all graphic features must be coincident, regardless of feature layer
- k. Geometric network connectivity shall be maintained for utility networks, where specified by the scope of work.

8. Field Collection

- a. Where field data collection is required, the contractor shall utilize conventional and other methods, such as a total station, or Global Positioning System (GPS) in accordance with the applicable Geospatial Positioning Accuracy Standards published by the Federal Geographic Data Committee (FGDC).
- b. At a minimum, the contractor shall provide resource grade GPS collection at an accuracy level of $\pm < 1\text{m}$ and shall use differential correction to target accuracies of $\pm .5\text{ m}$.
- c. Where appropriate (as stipulated in the contract or as otherwise determined by the Government), the contractor shall use survey grade GPS, at an accuracy level of $\pm 3\text{ cm}$. Global Positioning System (GPS) data collection activities will be based on a postprocessed environment using an accurately sighted base station. Base station files for post processing acquired locally (off-site CORS Continuous Operating Reference Station) will be verified for accuracy.
- d. GPS data on the location of utility lines and other features shall be captured at a minimum at the beginning, end, and at each turn or bend in the line and processed as a line feature type. GPS data on the location of utility points and other features shall be captured at the centroid of the feature unless signal obstruction or access prohibits; otherwise points will be captured at a uniform distance and direction from the centroid and the offset captured in the metadata for that feature. Data on polygon features shall be collected at every vertex of the feature and processed as a polygon.
- e. All survey-grade data collected shall be provided to the Government in a digital format with an attached Survey Report identifying survey method, equipment list, calibration documentation, survey layout, description of control points, control diagrams, quality control report and field survey data.

- f. A digital Survey Control Database (consisting of a survey marker database and a survey traverse database) will be produced for all survey control points established under this contract, including the horizontal and vertical order and coordinate location of each point.
- g. Digitizing/Conversion: Where Digitizing/Conversion is stipulated in the contract, the contractor shall digitize/convert features from designated sources (including remotely sensed data, hardcopy scans and vector data) to support various GIS applications. Digitizing/conversion routines will insure that 90 percent of all features will measure within 0.01 inches when reproduced at the scale of original imagery or data source

9. Photography.

- a. Photography on-base must be approved in advance of visiting the base, the Contractor shall identify the personnel designated as photographers for this contract and shall identify the proposed areas/facilities to be photographed and provide installation (via COR) with any required photographic equipment information.
- b. All photographs to be delivered/used in the final report must be geotagged with the UTM of the picture location

The contractor shall consult with the government points of contact to ensure data is placed into the appropriate layer. Please see <http://datacollectionadvisor.com/> for full guidance

This section lists:

- **SDSFIE Required Global Attributes**: These must be populated for each record in all layers
- **SDSFIE Required Global Metadata Attributes**: These must be populated for each record in all layers
- **Project Specific GIS Layer and Attribute Descriptions**: Specific to the scope of work, this section provides the full descriptions of each layer and available attributes. The contractor shall consult with the government points of contact to identify which specific non-required attributes to populate.

ATTRIBUTE	ATTRIBUTE DEFINITION	MANDATORY	ATTRIBUTE POPULATION GUIDANCE	EXAMPLE VALUE
FeatureName	The common name of the feature.	NO	For features that are not stored in iNFADS, populate with a common name of the feature if one exists, using Proper Case.	Kings Bay Fish and Wildlife Management Areas
FeatureDescription	The narrative describing the feature.	NO	For any attribute being populated with the domain value of "other", include the attribute name along with the description, and separate each using a semicolon (e.g., "natureOfConstruction: Plastic; purposeType: Recreation"). In addition, where appropriate, populate with text that further describes the feature (e.g., a local common name such as "Commercial Gate", or a physical label on a feature in the field such as "Fly Navy").	Management zone for Natural Resources management purposes.

Owner	The DoD Component or other entity that owns the feature.	YES	Populate with the appropriate value from the Owner constraint table.	Code: USN Description: US Navy
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ATTRIBUTE	ATTRIBUTE DEFINITION	MANDATORY	ATTRIBUTE POPULATION GUIDANCE	EXAMPLE VALUE
Creator	The name of the department or contractor that collected the information for the feature for the first time. For example, NAVFAC SE GRC, attribute as NAVFACSEGRC	YES	The name of the federal employee or name of the contracting company that created the information for the feature (e.g., Art Vandelay as "VandelayA" or Vandelay Industries as "Vandelay Industries").	PetermanJ
DateCreated	The date the feature was created for the first time.	YES	Populate with the date the feature was created (Geometry and Attribute).	6/28/1974

CollectionMethod	The method used to collect the geometry of the feature.	YES	Populate with the appropriate value from the CollectionMethod constraint table.	Code: HeadsUpImageryMgGPSVrfy Description: Heads Up Imagery Mapping Grade GPS Verify
LocationAccuracy	The location accuracy for the data that was collected and verified.	YES	Populate with the accuracy value followed by a space and then the abbreviation of the unit of measurement in lower case.	3 in
ATTRIBUTE	ATTRIBUTE DEFINITION	MANDATORY	ATTRIBUTE POPULATION GUIDANCE	EXAMPLE VALUE

Editor	The contractor or person that edited the feature attribution or geometry from its original or previous value. This is to be stated as last name of the person and then their first initial. For example, Jane Smith would be attributed as SmithJ.	YES	The name of the federal employee or name of the contracting company that last edited the information for the feature (e.g., Art Vandelay as "VandelayA" or Vandelay Industries as "Vandelay Industries"). If editing within Citrix M&A Spatial Database Engine (SDE) environment, this attribute will be autopopulated with the Citrix user name.	PetermanJ
DateEdited	The date that the feature was edited from its original or previous value.	YES	If editing within the Citrix M&A SDE environment, this attribute will be autopopulated. Otherwise, populate with the date the feature was edited (Geometry and/or Attribute).	6/28/1974

(End of clause)