

**STATEMENT OF WORK (SOW)  
N40192-18-R-8003  
GUAM MICRONESIAN KINGFISHER AVIARY DESIGN ON GUAM**

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## A. INTRODUCTION

This Cooperative Agreement supports the *Memorandum of Agreement between the Department of the Navy and the U.S. Fish and Wildlife Service regarding Conservation of Guam Micronesian Kingfisher Recovery Habitat in Northern Guam (2015)* and the *Biological Opinion for the Department of the Navy's Relocation of the U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam (USFWS, 2015)*, as amended.

Designs provided for under this Cooperative Agreement will additionally fulfill a public purpose of disseminating the transfer of applied design and conservation infrastructure technology to wildlife agencies and conservation non-profits who are stakeholders in the reintroduction of native bird species.

## B. PURPOSE

The purpose of this Cooperative Agreement (hereafter: Agreement) is to provide for an experienced and qualified technical team that will conduct all the necessary activities to develop deliverables to include an aviary design specific to supporting acclimation, trial releases and other “proving ground” activities for the future reintroduction of the GMK in consideration of adverse weather conditions and GMK predators on Guam.

## C. LOCATION

The location for performance of this Agreement is the island of Guam with specific planning efforts focused on specific conditions in Northern Guam (see Figure 1).



Figure 1. Potential areas of planning focus within the JRM Area of Responsibility.

## D. DESIGNATED REPRESENTATIVES

1. The Grants Officer is Eugene Diaz, Acquisition Director, Naval Facilities Engineering Command, Marianas, PSC 455, Box 195, FPO AP GU 96540-2937, email: [Eugene.Diaz@fe.navy.mil](mailto:Eugene.Diaz@fe.navy.mil).
2. The Cooperative Agreement Contract Specialist is Thelman Mark Fontenot, Naval Facilities Engineering Command, Marianas, PSC 455, Box 195, FPO AP GU 96540-2937, email: [thelman.fontenot@fe.navy.mil](mailto:thelman.fontenot@fe.navy.mil).
3. The Cooperative Agreement Technical Representative (CATR) is officially designated by the Grants Officer, and is responsible for monitoring the Recipient's performance, in accordance with the terms and conditions of the Agreement.
  1. The CATR shall be the first point of contact of the Recipient of the Agreement concerning issues/concerns regarding any of the requirements and specifications of this agreement, with the exception of duties assigned to local Alternate CATRs. The CATR for this agreement shall be Coralie Cobb, Senior Natural Resources Specialist, NAVFAC Southwest, 2408 High Lonesome Trail, Lafayette, CO 80026; Telephone: (720) 542-3085; Email: [Coralie.cobb@navy.mil](mailto:Coralie.cobb@navy.mil)
4. The Alternate Cooperative Agreement Technical Representatives (ACATR) identified under this section shall be the installation's technical resource person for access, safety, technical or biological issues. For awareness, the CATR and ACATR shall be concurrently notified of all communications by the Recipient of the Agreement.
  - a. The ACATRs for this agreement are:
    - Mr. Albert Borja, Environmental Director, NAVFAC Marianas Guam, MCAG PWD, Redmond Lane Bldg. 228, Naval Computer and Telecommunication Station; Telephone (671) 355-1310; Email: [albert.borja@fe.navy.mil](mailto:albert.borja@fe.navy.mil).
    - Ms. Lauren Gutierrez, Natural Resource Specialist, NAVFAC Marianas Guam, MCAG PWD, Redmond Lane Bldg. 228, Naval Computer and Telecommunication Station; Telephone (671) 355-1310; Email: [lauren.gutierrez@fe.navy.mil](mailto:lauren.gutierrez@fe.navy.mil).
5. Recipient of the Agreement: The Recipient of the Agreement is responsible for implementing the scope of the Agreement. The Recipient of the Agreement shall direct all communications to the CATR and ACATR.

## **E. PERIOD OF PERFORMANCE**

The period of performance will be eighteen (18) months starting from the date of award. After completion of the initial period of performance, the total performance period can include two (2) option periods of twelve (12) months each dependent upon the availability of funds and the unilateral election of the Government to exercise an option. This proposed award is based on the availability of funds.

Anti-Deficiency Act: The Department of Navy's obligation to pay or reimburse any costs hereunder is subject to the availability of appropriated funds and limited by funds obligated and nothing in this Agreement will be interpreted to require obligations or payments by the Federal Government in violation of the Anti-Deficiency Act, 31 U.S.C. §1341.

## **F. MATERIAL FOR REVIEW**

Recipient and/or his/her representative(s) will have access to the following materials through the CATR/ACATR. The Recipient shall pay for or replace any items borrowed that are damaged, stolen or lost:

- GMK Memorandum of Agreement
- MCAG Natural Resources Information (GIS)
- Other Department of the Navy plans, protocols and procedures required for the performance of duties

## **G. GENERAL REQUIRMENTS**

1. 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, timekeeping, inventory, analysis, quality control, and for meeting professional industry standards for the work provided.
2. Due to the complexity of the work, the Recipient shall provide the following key personnel with the following minimum qualifications:

**Principal Investigator (PI):** This individual shall be the Recipient of the Agreement's responsible person for scientific/technical approach and execution of the project. The PI shall meet the following requirements:

- Possess at least a Masters in Science (MS) degree in biology or a related field
- At least two (2) years of experience in management of ornithology-related projects, preferably with Guam Micronesian kingfisher or a closely related species, and/or species reintroductions

- At least two (2) years of PI or Project Manager (PM) professional work experience in the field of ornithology, wildlife biology, conservation biology, or a related field
- At least two (2) years of experience working in the Guam Micronesian kingfisher or a closely related species

**Project Managers (PMs):** The Recipient shall assign an appropriate number of PMs for this Agreement, who shall be responsible for overseeing on a day-to-day basis necessary activities of the project. The PM's oversight of the project includes monitoring and controlling project costs, assigning personnel consistent with the Agreements requirements, understanding and assuring compliance with applicable Federal, DoD, DON and Air Force natural resources and environmental policies and regulations and their territory counterparts, and other applicable or relevant and appropriate requirements, shall be the first in line of control in ensuring that information/data obtained for the project are of high quality and accuracy, and shall be responsible in keeping quality control and assurance inspections activities and record keeping of these inspections. The PMs shall meet the following requirements:

- Bachelors of Science (BS) degree in biology or a related field
  - At least one (1) year of experience in management of ornithology-related projects, preferably with Guam Micronesian kingfisher or a closely related species, and/or bird species reintroductions
  - At least one (1) year of PI or Project Manager (PM) professional work experience in the field of ornithology, wildlife biology, conservation biology, or a related field
  - At least one (1) year of experience working in the Guam Micronesian kingfisher or a closely related species
5. The Recipient shall provide technical personnel to accomplish the full purpose of this Agreement. It is the Recipient's responsibility to obtain security and entrance clearances and camera passes for himself/herself and his/her personnel and take munitions and explosives of concern training (~1 hour) if site visits within JRM AOR is necessary. The Recipient must comply with all Installation security rules, regulations, requirements, and day-to-day operational changes thereto.
  6. The Recipient shall provide all transportation, meals, and lodging for himself/herself and his/her personnel and all equipment necessary to complete the work. All equipment utilized on the Base is subject to inspection by and approval of the Installation Safety Officer.
  7. The CATR shall be notified immediately when any threatened or endangered fauna species are observed in the project area and work stopped if any activities may adversely affect any of these species.
  8. At no cost to the Government, the Recipient shall be in possession of all necessary permits or certifications necessary to conduct the activities stipulated in the

Agreement. All work conducted in support of this Agreement shall comply with all Federal and Territorial laws applicable to JRM.

9. All parties involved in this Agreement agree to comply with all applicable laws and regulations 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.
10. Vehicle operators may **not** use cell phones unless the vehicle is stopped.
11. All field notes, and forms, electronic storage of field data, photographs, etc. collected and produced as part of this Agreement are property of the DON and shall be provided to the CATR upon request.
12. 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 Grants Officer shall approve (via the CATR) in advance any changes to previously used experimental designs, methods of data collection and/or analysis, which shall be provided in the Recipient's required Work Plan. The CATR at their discretion, may subject draft work plans, draft reports or draft manuscripts to external peer review.
13. In order to avoid impacts to federally listed, rare, or endemic plants the Recipient must coordinate any potential to disturb vegetation or ground surface with the CATR. **Under no circumstances are any federally protected plants to be 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. CATR will provide a field identification "guide" of protected species and necessary actions when species are encountered.
14. Work areas within the JRM AOR may have Unexploded Ordnance (UXO) from World War II. Recipient field personnel will be requested to attend the Naval Facilities Engineering Command (NAVFAC) Marianas UXO Awareness Training prior to conducting any fieldwork. No ground disturbing activities are to take place unless authorized by the CATR.
15. Under no circumstances shall the Recipient violate the Archeological Resources Protection Act. If any objects are found that appear to be cultural or archeological resources contact the Cultural Resources Program Manager. 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 and AAFB Cultural Resources Program Manager.

16. The Recipient must comply with the JRM Hazardous Waste Management Plan. The Recipient shall manage any generated hazardous material, hazardous waste, and hazardous waste residues in accordance with Federal, State, and local regulations. Transport and dispose of hazardous waste (i.e., batteries) in accordance with Federal, State, local and applicable JRM requirements.
17. The Recipient shall inform the appropriate installation security (AAFB) via phone and e-mail of any unusual activity observed while conducting visits 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.
18. The Recipient shall inform the CATR via phone and e-mail of any endangered, threatened, or rare animal or plant species observed while conducting visits 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.
19. Throughout the term of this Agreement the CATR 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 Grants Officer in establishing the Recipient's performance in fulfilling the requirements of this Agreement.
20. The DON, via the Grants Officer, 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 Grants Officer, via the CATR. 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 Grants Officer (via CATR) 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.

## **H. SPECIFIC REQUIREMENTS:**

This Agreement requires the Recipient to develop and implement two (2) technical requirements and four (4) tasks during the performance period, as follows:

### Technical Requirements:

1. Aviary design; and
2. Reporting describing aviary design.

### Tasks:

Task 1 – Project Planning: 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. Planning work shall include:

1. The Recipient will be responsible for presenting a plan of action and milestones (POAM) for timely completion of the work. The POAM will be provided to the CATR at least 1 week prior to the kick-off meeting. CATR will comment on POAM and Recipient will incorporate comments before POAM is finalized.
2. The Recipient shall ask any questions related to the successful completion of the work.
3. The Recipient shall be responsible for documenting the discussions (meeting minutes). Meeting minutes shall be provided to the CATR within 5 days after the kick-off meeting. The kickoff meeting will be held via conference call (date, time and location to be determined). The Recipient shall provide project status and schedule updates, and deliverables throughout the duration of the Agreement.

Task 2 – Project Management: The Recipient shall provide project oversight and coordination for all technical requirements and tasks. This will include; maintaining budget coordination, tracking, and reporting, as appropriate. Project management work shall include:

1. The Recipient is responsible for providing monthly updates to the CATR and the updates shall include implementation accomplishments, budget drawdowns, technical aspects, any project coordination difficulties, adaptive management proposals or actions, and agreement's quality control and assurance activities.

Task 3 – Aviary Design: The Recipient shall develop cost-effective methods for the development of a predator-proof Guam Micronesian kingfisher aviary. Design criteria should factor in engineering considerations such as cost-effective phased deployment (relative to long-term timeline for reintroduction of GMK in the wild) of separate modules that consider scalability in the field (up or down-scale), portability and speed of deployment



with common hand tools and non-mechanized site preparation, ease of maintenance and repair, heavy weather resistance, and field reconfiguration with limited use of weight handling equipment.

Task 4 – Draft and Final Reports: Recipient shall indicate in their Statement of Interest the timeline for delivery of the draft and final aviary designs and draft and final project reports.

## **I. MEETINGS/COORDINATION**

1. *Kickoff Meeting (KM):* The Recipient of the Agreement shall coordinate, schedule and prepare the agenda for the KM. The KM shall be held no later than 30 days of award of the Agreement. The Recipient of the Agreement shall be responsible in taking the minutes of the meeting and shall submit the draft minutes for CATR review within ten days from the date when the KM was held.
2. The Recipient of the Agreement shall be responsible in coordinating meeting schedules, providing the agenda and materials for the meeting and writing up the meeting minutes.

## **J. SUBMITTALS and SCHEDULES**

1. Abbreviated Accident Prevention Plan, Activity Hazardous Analysis and Hazard Analysis and Critical Control Plan: If field work is to be conducted, the Recipient of the Agreement shall develop and maintain a safety program in compliance with Navy Facilities Engineering Command Safety Notices 5100 and Air Force Safety AFI -90-0203. The Recipient of the Agreement shall prepare and submit a Draft/Final Abbreviated Accident Prevention Plan (AAPP) and Activity Hazardous Analysis (AHA) that incorporates Navy Safety Regulations that are applicable to the execution of this project. The AAPP shall, at a minimum, contain information outlined in EM 385-1-1 (30 Nov 2014). The Recipient of the Agreement shall also finalize a template Hazard Analysis and Critical Control Plan (HACCP) to ensure that invasive species are not transported or introduced in association with any required field visits or travel.
  - a. The Recipient of the Agreement shall submit 1 (one) electronic copy of the draft AAPP, AHA and HACCP fifteen working days prior to the kickoff meeting.
  - b. The Recipient of the Agreement shall implement safety measures for all work carried for the project consistent with the project's Final AAPP, AHA and HACCP.
  - c. The Recipient of the Agreement personnel shall work in a safe manner in the field and comply with all applicable safety regulations. Recipient of the Agreement safety records shall be available upon request by the

Government's Cooperative Agreement Administrator or the CATR or the Base's Security and Safety Officer.

- d. The Recipient of the Agreement shall ensure work is conducted in accordance with EM 385-1-1 US Army Corps of Engineers Safety & Health Requirements Manual, OSHA, local laws, regulations and requirements.
- e. The Recipient of the Agreement shall submit 1 (one) electronic version of the Final AAPP, AHA and HACCP within fifteen days prior to the initiation of the project's field activities. A Government reviewed and approved final AAPP, AHA and HACCP shall have been in place prior to the Recipient of the Agreement's initiation of field work. The Recipient of the Agreement's professional safety staff, whose signature shall be in the draft/final AAPP and AHA, shall include a job/field site hazard analysis for all tasks reasonably anticipated by the contract's requirements and address all sections that are deemed appropriate for performing this contract, while ensuring a safe work environment for all personnel involved. References used to develop the site- specific plan include: 29 CFR 1-910.120 (Hazardous Waste Operations & Emergency Response), EM 385-1-1 US Army Corps of Engineers Safety & Health Requirements Manual, and Local Activity safety plans and standard operating procedures.
- f. The Recipient of the Agreement must certify to the Government's Cooperative Agreement Administrator and CATR that these safety documents have been reviewed with each Recipient of the Agreement employee and Sub-Recipient of the Agreement's employees (as applicable) prior to mobilization and start of fieldwork activities. The AAPP shall be immediately accessible to the Recipient of the Agreement's Site Safety Officer and PI at all times during the project, and a copy shall be available in all water and land vehicles utilized for work under this contract.

2. Aviary Design Work Plan: The Recipient of the Agreement shall submit a Aviary Design Work Plan that will show in reasonable detail the approach (including the project's plan of action and milestones [POAM] with dates) that will be taken to successfully accomplish the requirements and specifications of Agreement. The draft/final plan shall include a tabled schedule of definable features of work such as travel, meetings, field activities and deliverable submittals.

- a. The Recipient of the Agreement shall submit 1 (one) electronic copy of the Aviary Design Work Plan at least one week prior to the date of the project's kickoff meeting.
- b. The Recipient of the Agreement shall submit 1 (one) electronic copy and 1 (one) hard copy of the Final Aviary Design Work Plan ten days after the receipt of Government comments. Agreement activities cannot proceed

under the Aviary Design Work Plan has been accepted by the Government.

3. Meeting Minutes: The Recipient of the Agreement shall be responsible in taking the minutes of the meetings necessary to fulfill this Agreement. The Recipient of the Agreement shall submit the draft meeting minutes within ten days from the date when the meeting was held.
4. Monthly Progress Reports (Monthly PR): The Recipient of the Agreement shall provide 1 (one) electronic copy of the monthly PR that would summarize their implementation accomplishments as specified in the Agreements scope and final work plan. The monthly PR shall also include information on the Recipient of the Agreement's quality control and assurance activities and their successful implementation of the APP, AHA and HACCP. Monthly progress reports shall include consolidated any GIS data collected from the field in support of design work. The first monthly PR shall be submitted by the end of the 1st month from the date of award of the cooperative agreement and every month thereafter.
5. Draft Final Project Report and Final Project Report: The Draft Final Project Report (DFPR) and Final Project Report (FPR) shall contain a detailed narrative of all work conducted under this Agreement, to include conclusions and recommendations for future study.
  - a. The DFPR shall be submitted to the CATR for review no later thirty days prior to the end of the period of performance of this Agreement. The Recipient of the Agreement shall submit one (1) electronic copy and two (2) hard copies of the DFPR for a fifteen day Government review. The DFPR will include all maps, GIS data and appropriate figures/graphics.
  - b. The FPR will be submitted to the CATR no later than fifteen days after receipt of comments from the CATR. The Recipient of the Agreement shall submit two (2) hard copies of the FPR. The Recipient of the Agreement shall submit one (1) electronic copy of the following within a CD-ROM: a) the FPR in Microsoft Word, b) the FPR in Portable Document Format (pdf), c) figures and graphics, d) GIS data layers and e) comment matrix. For the comment matrix, the Recipient of the Agreement shall take all comments from the Government on all reports and incorporate them into a comment matrix. The comment matrix shall identify how each comment was addressed by the Recipient of the Agreement and where in the document (page number, paragraph, and line) the corrections are to be found. The comment matrix will be used as a quality assurance tool.
  - c. For the DFPR and FPR, the Recipient of the Agreement shall reasonably follow the formats described by "The Ecological Society of America or Chamberlain and Johnson 2008 for Journal of Wildlife Management (JWM). JWM Manuscript Guidelines can be accessed at [http://joomla.wildlife.org/documents/Manuscript\\_Guidelines\\_2008.pdf](http://joomla.wildlife.org/documents/Manuscript_Guidelines_2008.pdf). Where JWM Manuscript Guidelines do not provide sufficient direction, as appropriate,

follow the standards provided in Scientific Style and Format; The CSE Manual Authors, Editors, and Publishers, Seventh Edition, Style Manual Committee Council of Science Editors.

- d. Any GIS shapefile database shall be submitted with the DFPR and FPR in a properly labeled CD-ROM, which shall be inserted in a pocket at the inside page of the report's back cover page. All GIS shapefile database format shall comply with Navy requirements and specifications provided in Attachment 1. Specific GIS requirements for this Agreement are listed below:
  - (1) Any locational data collected and relied upon for development of designs shall be collected with survey grade GPS data collection. Horizontal accuracy for survey grade GPS data collection shall be + 1 centimeter at 1 sigma unless otherwise specified in the statement of work. The maximum allowable degree of error for survey grade GPS data collection shall be + 100 centimeters. Any features collected that exceed this degree of error will be rejected and tagged for recollection. Every effort shall be made to capture feature locations without using offsets unless obstructions are present. Data sets derived from GPS data collection efforts shall include metadata to record descriptions of the receiver and other equipment used during collection and processing, base stations used for differential corrections, software used for performing differential corrections, estimated horizontal and vertical accuracies obtained, and conversion routines used to translate the data into final geographic data delivery format.
  - (2) Geographic data must be provided in a form that does not require translation, preprocessing, or post processing. All digital geographic maps and the related data sets shall be delivered in a SDSFIE compliant file geodatabase format (Access database file) utilizing the latest version of ArcGIS that has been approved by the Naval Information Technology Center (NITC), currently ArcGIS 10.1.
  - (3) The Recipient of the Agreement shall develop all geographic information in a structure consistent with the most current version of the Spatial Data Standards for Facilities, Infrastructure and Environment (SDSFIE), also known as the National Committee for Information Technology Standards 353. Currently the version used is SDSFIE 2.7. The SDSFIE format shall be followed for geospatial database table structure, nomenclature, and attributes.
  - (4) The Recipient of the Agreement shall fit collected GIS data into the named feature classes and populate feature attribute information into provided fields. If the Recipient of the Agreement does not find the appropriate field for their data, they may create the fields as needed.
  - (5) All data coordinate systems shall be in UTM WGS-84 55N and projection

provided in Universal Transverse Mercator projection, the above zone, and in meters. Dates of surveys and correct scientific species names shall be populated in the attribute tables. All spatial duplicates shall be removed from GIS data. The Recipient of the Agreement shall provide a PDF copy of all maps associated with the GIS data in this Agreement.

- (6) All constructed maps shall have the associated ArcMap Document File (MXD) delivered to allow for future printing and modification. MXDs shall use the relative paths option or layer packages. The Table of Contents (TOC) within the MXD shall be orderly and contain a logical naming structure.

6. The digital geographic maps, related data, and text documents shall be included for review in the DFPR and FPR. The data will be analyzed for discrepancies in subject content, correct format in accordance with these specifications, and compatibility with the existing GIS system. The Recipient of the Agreement shall incorporate review comments to data and text prior to approval of the FPR.

7. Table 1. Summary of deliverables/submittals:

<b>Deliverable</b>	<b>Copies</b>	<b>Submittal Date/Timing</b>
Draft AAPP/AHA/HACCP	1 electronic copy (word-format)	15 days prior to kick-off meeting
Final AAPP/AHA/HACCP	1 electronic copy (pdf-format)	15 days prior to initiation of field activities
Draft Aviary Design Work Plan	1 electronic copy (word-format)	At least 7 days prior to kick-off meeting
Final Aviary Design Work Plan	1 electronic copy (pdf-format), 1 hard copy	10 days after receipt of Government comments
Monthly Progress Reports	1 electronic copy (pdf-format)	Monthly, for the duration of the agreement
Meeting minutes	1 electronic copy (pdf-format)	10 days after each meeting, as needed
Draft Aviary Design	1 electronic copy (pdf-format)	As agreed upon in Design Work Plan
Final Aviary Design	1 electronic copy (pdf-format)	As agreed upon in Design Work Plan
Draft Project Report	1 electronic copy (word-format), & 2 hard copies	30 days prior to the end of the Period of Performance
Final Project Report, to include comment response matrix	1 electronic copy (word-format) 1 electronic copy (pdf-format) 2 hard copies	NLT 15 days after receipt of Government comments
Other progress deliverables per approved Design Work Plan	1 electronic copy (pdf-format)	As agreed upon in Design Work Plan

## **K. DATA AND PUBLICATION**

1. This Agreement is subject to, and 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 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 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 or note published or unpublished or be part of any technical or non-technical presentation 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 paper or presentation resulting from this work shall include the following statement: “This research was funded by the DoN on behalf of JRM, Guam.” Any publications resulting from this work shall be provided at no cost to the DoN in quantities jointly determined by the DN’s 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.

## **M. SAFETY**

The Recipient will be required to develop an Accident Prevention Plan (APP) for any field work following the format in Appendix A of the EM 385-1-1 05 July 2011 or latest edition. A Site Safety and Health Plan (SSHP) is also required if the work is potentially hazardous.

Potentially hazardous activities include, but are not limited to:

- i. soil boring or digging test pits (excludes manual collection of de minimis surface soil samples)
- ii. all field work on hazardous waste or munitions response sites
- iii. work on, in, or near bodies of water where there a danger from drowning
- iv. use of heavy equipment, e.g. backhoes, excavators, bulldozers, etc.
  - v. excavation, backfilling, and compaction
  - vi. use of man lifts, ladders, and other climbing apparatus
  - vii. use of firearms, or other weapons
- viii. well drilling and/or well pump repair or replacement
- ix. construction, demolition, or repair of site improvements
- x. remediation of hazardous material or waste, i.e. asbestos, paint with lead, and polychlorinated biphenyl (PCB)
- xi. work within 10 (ten) feet of high voltage lines, or high pressure gas, steam, or water lines

The minimum requirement for the SSHP is in Section 28 of the EM 385-1-1. Include an Activity Hazard Analysis (AHA) for all tasks reasonably anticipated to be performed as part of this statement of work. Format and instructions for the AHA is in section 1 of the EM 385-1-1. As a minimum, references used to develop the APP, SSHP and AHA are: EM 385-1-1 US Army Corps of Engineers Safety & Health Requirements Manual, and Local Activity safety plans and standard operating procedures. When developing the APP, SSHP and AHA, address all sections that are deemed appropriate for performing the work in this Agreement, while ensuring a safe work environment for all personnel involved. The draft APP, SSHP and AHA have to be reviewed by the NAVFAC Marianas Safety Office prior to start of field work activities.

NOTE: AHA is an attachment required by the APP. SSHP is also an attachment required by the APP if a project includes potentially hazardous activities. Government PM should verify with the NAVFAC Marianas Safety Office prior to directing the recipient to prepare a SSHP. The APP, SSHP and AHA will provide a safe and healthful environment for all personnel involved as well as personnel working near the sites for the DON. The Recipient shall certify to CATR that the final APP, SSHP and AHA have been reviewed with each Recipient employee working on this Agreement prior to mobilization and start of fieldwork activities.

A Draft and Final APP, SSHP and AHA will be submitted concurrently with the Draft Work Plan but shall be printed under a separate cover from the Work Plan. The final APP, SSHP and AHA shall be immediately accessible to the Site Safety and Health Officer (SSHO) and Project Manager at all times during the project, and a copy shall be available in every vehicle utilized for work under this Agreement. The SSHO is required to have completed the 10-hour OSHA Safety Training.

Man-hour reporting is also required by the EM 385-1-1 and the Unified Facilities Guide Specifications (UFGS) -01 35 26, (February 2012) change 2, 08/13. The recipient will provide a Monthly Exposure Report (MER) and attach to the monthly

billing request.

The CATR will submit a copy of the MER to the NAVFAC Marinas Safety Office.

## **N. HOLD HARMLESS**

1. The Government shall not be responsible for the loss of or damage to property of the Recipient and/or his/her representatives, or for personal injuries to the Recipient and/or his/her representatives arising from or incident to the use of government facilities or equipment. Recipient shall indemnify, hold harmless, defend and save Government harmless and shall pay all costs, expenses, and reasonable attorney's fees for all trial and appellate levels and post-judgment proceedings in connection with any fines, suits, actions, damages, liability and causes of action of every nature whatsoever arising or growing out of, or in any manner connected with, the Agreement and attendant occupation or use of Government Premises including but not limited to AAFB, by Recipient, its employees, servants, agents, guests, invitees, and contractors. This includes, but is not limited to, any fines, claims, demands and causes of action of every nature whatsoever that may be made upon, sustained or incurred by the Government by reason of any breach, violation, omission or non-performance of any term, covenant or condition hereof on the part of the Recipient, its employees, servants, agents, guests, invitees, or contractors. This indemnification also applies to claims arising out of the furnishings of any utilities or services by the Government or any interruption therein or failure thereof, occasioned by the negligence or lack of diligence of Recipient or its respective officers, agents, servants or employees. However, this indemnity shall not extend to damages due to the sole fault of the Government or its employees, agents, servants, guests, invitees or contractors. This covenant shall survive the termination of this Agreement.

2. In the event of damage, including damage by contamination, to any Government property by the Recipient, its officers, agents, servants, employees, or invitees, the Recipient, at the election of the Government, shall promptly repair, replace, or make monetary compensation for the repair or replacement of such property to the satisfaction of the Government.

## **O. 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 O, including coverages specified in Attachment A 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 O, the Recipient shall promptly give notice thereof to the Government and, to the extent of its liability as provided in this Section O, 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 O, 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 O, 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.

## **P. 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.
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 (DFAR) 252.232-7006 Wide Area Work Flow Payment Instruction. See Attachment C WAWF Instructions for instructions on payment procedures.

## **Q. EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT REPORTING**

1. 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.

2. Unless otherwise directed by the Contracting Officer/Grants Officer, by the end of the month following the month of award of a first-tier 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.fsr.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.
3. By the end of the month following the month of a 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 –
    - (1) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and

(2) \$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>).

(c) 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

(1) In the Subcontractor's preceding fiscal year, the Subcontractor received –

(a) 80 percent or more of its annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and

(b) \$25,000,000 or more in annual gross revenues from Federal contracts (and subcontracts), loans, grants (and sub grants) and cooperative agreements; and

(d) 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.

**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."

**ATTACHMENT A (Continued)**  
**NON SELF-INSURED REQUIREMENTS FORM**

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. N40192-18-R-8003."

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

**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:**

- 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 policy."
- c. "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."
- d. "This insurance certificate is for use of facilities at Joint Region Marianas, Guam under this Cooperative Agreement, No. N40192-18-R-8003."
- e. 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 Project Report shall follow the formats described by Messmer, T.A and M.L. Morrison 2006, in “Unified Manuscript Guidelines for the Wildlife Society Peer-Reviewed Publications in the Journal of Wildlife Management, volume 70, issue 1; pages 304-320, as appropriate, with the following outline:

1. Title page showing the title, date, and CATR 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 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
  - (d) List of appendices
- iv. Abstract
- v. Introduction
- vi. Study Area
- vii. Methods
- viii. Results



**ATTACHMENT B (Continue)**  
**DRAFT AND FINAL REPORT FORMAT**

ix. Discussion.

xi. Acknowledgments

xii. Appendices

xiii. Electronic Appendices.

Where JWM Manuscript Guidelines do not provide sufficient direction, as appropriate, follow the standards provided in *Scientific Style and Format; The CSE Manual Authors, Editors, and Publishers, Seventh Edition*, Style Manual Committee Council of Science Editors, <http://www.scientificstyleandformat.org/Home.html> .

**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 self-registration available at this Web site.

(d) WAWF training. The Contractor/Recipient should follow the training instructions of the WAWF Web-Based 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: N40192-18-R-8003.

(1) Document type. The Recipient shall use the following document type(s).  
NAVY CONSTRUCTION/FACILITIES MANAGEMENT INVOICE

**ATTACHMENT C (Continue)**  
**WAWF INSTRUCTIONS**

(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  
Admin DoDAAC N40192  
Inspect By DoDAAC N40192  
Ship To Code N/A  
Ship From Code N/A  
Mark For Code N/A  
Service Approver (DoDAAC) N/A  
Service Acceptor (DoDAAC) N40192  
Accept at Other DoDAAC N/A  
LPO DoDAAC N40192  
DCAA Auditor DoDAAC N/A  
Other DoDAAC(s) N/A  
-----

(4) 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.

(1) WAWF email notifications. The Contractor/Recipient shall enter the email address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system.

(g) [Christopher.Santos@fe.navy.mil](mailto:Christopher.Santos@fe.navy.mil), 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**

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

(End of clause)

**ATTACHMENT D**  
**NAVFAC Standards for Geographic Information System (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 10.1 as of May 2014**. All ESRI format data submittals must also be in version 10.1.

- 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:

**ATTACHMENT D (Continue)**  
**NAVFAC Standards for GIS**

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 3.03 as of December 2015.** Information on the SDSFIE 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 SDSFIE 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 SDSFIE 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 SDSFIE 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

**ATTACHMENT D (Continue)**  
**NAVFAC Standards for GIS**

- f. 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.
- g. 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 SDSFIE.
  - 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

**ATTACHMENT D (Continue)**  
**NAVFAC Standards for GIS**

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. The government shall specify whether files are to adhere to either the SDSFIE or A/E/C CAD standard.

**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 3.03 are listed in **APPENDIX C**

- 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-metadata-standards>.

**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 SDSFIE version 3.03 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.

**ATTACHMENT D (Continue)**  
**NAVFAC Standards for GIS**

- 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 +/- < 1m and shall use differential correction to target accuracies of +/- .5 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 +/- 2 cm. Global Positioning System (GPS) data collection activities will be based on a post-processed 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 every 50ft 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.



**ATTACHMENT D (Continue)**  
**NAVFAC Standards for GIS**

- e. All survey-grade data collected shall be provided to the Government in a digital format with an attached Survey Report identifying survey method,
- f. equipment list, calibration documentation, survey layout, description of control points, control diagrams, quality control report and field survey data.
- g. 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.
- h. 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

**ATTACHMENT E**  
**Specifications for GIS Layers and Attributes**

The Recipient shall consult with the government points of contact to ensure data is placed into the appropriate layer.

This section lists:

- **SDSEIE Required Global Attributes**: These must be populated for each record in all layers
- **SDSEIE 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.

**Name:** **FeatureName**

**Description:** The common name of the feature.

**Data Type:** String (80)

**Default Value:** null

**Domain:** NA

**Key:** NA

**Name:** **FeatureDescription**

**Description:** A narrative describing the feature.

**Data Type:** vChar (MAX)

**Default Value:** null

**Domain:** NA

**Key:** NA

**1. SDSFIE Required Global Metadata Attributes**

These attributes must be populated in each record in all layers.

**Name:** **editor**

**Description:** Contractor or person that edited the feature attribution or geometry from its original or previous value. Last Name of the person and first initial. For example, Jane Smith would be attributed as SmithJ.

**Data Type:** String (20)

**Default Value:** null

**Domain:** NA

**Key:** NA

**ATTACHMENT E (Continue)**  
**Specifications for GIS Layers and Attributes**

**Name:** **dateEdited**

**Description:** Date that the feature was edited from its original or previous value.

**Data Type:** Date

**Default Value:** null

**Domain:** NA

**Key:** NA

**Name:** **collectionSource**

**Description:** Describes how the data was collected and verified. (Example: GPS Field Collected – Mapping Grade).

**Data Type:** String (75)

**Default Value:** null

**Domain:** CollectionSource

**Key:** NA

**Name:** **locAccy**

**Description:** Describes the location accuracy of the data that was collected and verified.

**Data Type:** String (50)

**Default Value:** null

**Domain:** NA

**Key:** NA

**Name:** **metaNotes** (\*\* use only if needed)

**Description:** Describes other details about what was created or edited and why.

**Data Type:** String (255)

**Default Value:** null

**Domain:** NA

**Key:** NA